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ARMY AVIATION in the Republic of

KOREA

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★
Brigadier General Ellis D. Parker
Army Aviation Officer
ODCSOPS, Headquarters,
Department of the Army

★★
Major General Carl H. McNair Jr.
Commander
U.S. Army Aviation Center
Fort Rucker, Alabama

★
Brigadier General Richard D. Kenyon
Deputy Commander
U.S. Army Aviation Center
Fort Rucker, Alabama

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Honorable John A. Marsh Jr.
Secretary of the Army

Richard K. Tierney
Editor

The mission of the ***U.S. Army Aviation Digest (USPS 415-350)*** is to provide information of an operational, functional nature concerning safety and aircraft accident prevention, training, maintenance, operations, research and development, aviation medicine and other related data.

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"NUMBER ONE IN EIGHTY ONE"—a fitting motto for the U.S. helicopter team in the World Helicopter Championships last month in Poland. As described in "Reporting Final" this month, the U.S. team, consisting of four Army crews and one civilian crew, edged out helicopter pilots from the Federal Republic of Germany, Poland, the Soviet Union and Great Britain to bring the United States its first world championship. In addition, CW2 George D. Chrest, D Troop, 1/9 Cav, 1st Cavalry Division, Ft. Hood, TX, won top honors, a gold medal and the title "World Champion Helicopter Pilot." We all salute the members of the team for their tremendous display of skill and success in an extremely competitive international event.

Each issue of the ***Aviation Digest*** is theme oriented and features an area of specific interest and application of critical Army Aviation resources. This orientation serves to keep aviation personnel worldwide better informed and more ready and capable as a fighting force. This issue is particularly interesting since it focuses on an active front where our military forces stand ready—hilltop to hilltop—to meet Communist aggression in the "Land of the Morning Calm."

Much of our heritage in Army Aviation and our embryo tactics evolved from our experiences in the Korean conflict some 30 years ago. Seeds planted there in the 1950s have produced many of the airmobile concepts that make Army Aviation the formidable fighting force it is today. Operations in that country are an important part of our history, but they are also vital to our current posture as a combined arms team member. Present-day operations of U.S. Forces in Korea are the annals of tomorrow's history and are the topic for the lead articles of this month's issue (and another in October).

General John A. Wickham Jr., commander, Eighth U.S. Army, Korea, launches our Korea series with a splendid overview of "Army Aviation in the Republic of Korea." Therein he defines aviation's role very succinctly "to train and maintain combat readiness posture at very high levels, so that if the units had to transition to war they would be ready for it." He also describes interoperability with the ROK Army Aviation, how it is attained and maintained and how important it is. Finally, he describes the challenges presented to our Army Aviation personnel in Korea, especially those flying near the demilitarized zone (DMZ).

General Wickham's definition of the EUSA's aviation mission, and his emphasis on the dangers presented by the DMZ, is supported in greater depth in this issue by additional articles.

First, in "2d Infantry Division Air Assets," Staff Sergeant Bob Hubbert relates how the 2d Division resources are in a ready state at all times. This certainly upholds the division's motto, "Think War,"—a very appropriate motto for a unit located "just a few kilometers from North Korea."

In getting aircraft from place to place and down safely, nowhere is the work of our Army air traffic controllers more appreciated than it is in Korea. How those duties are professionally fulfilled in the face of almost every conceivable obstacle is described in "Evenreach ATC" by Specialist Five Doug Hartman and in "Air Traffic Control—Korea." These articles should make each reader more appreciative of the dedicated Soldiers who direct and control our air traffic. In fact, because of recent events associated with air traffic control nationwide, I am sure that all of our citizens now have a far greater understanding of just what controllers do and how essential they are to the safe passage of air traffic.

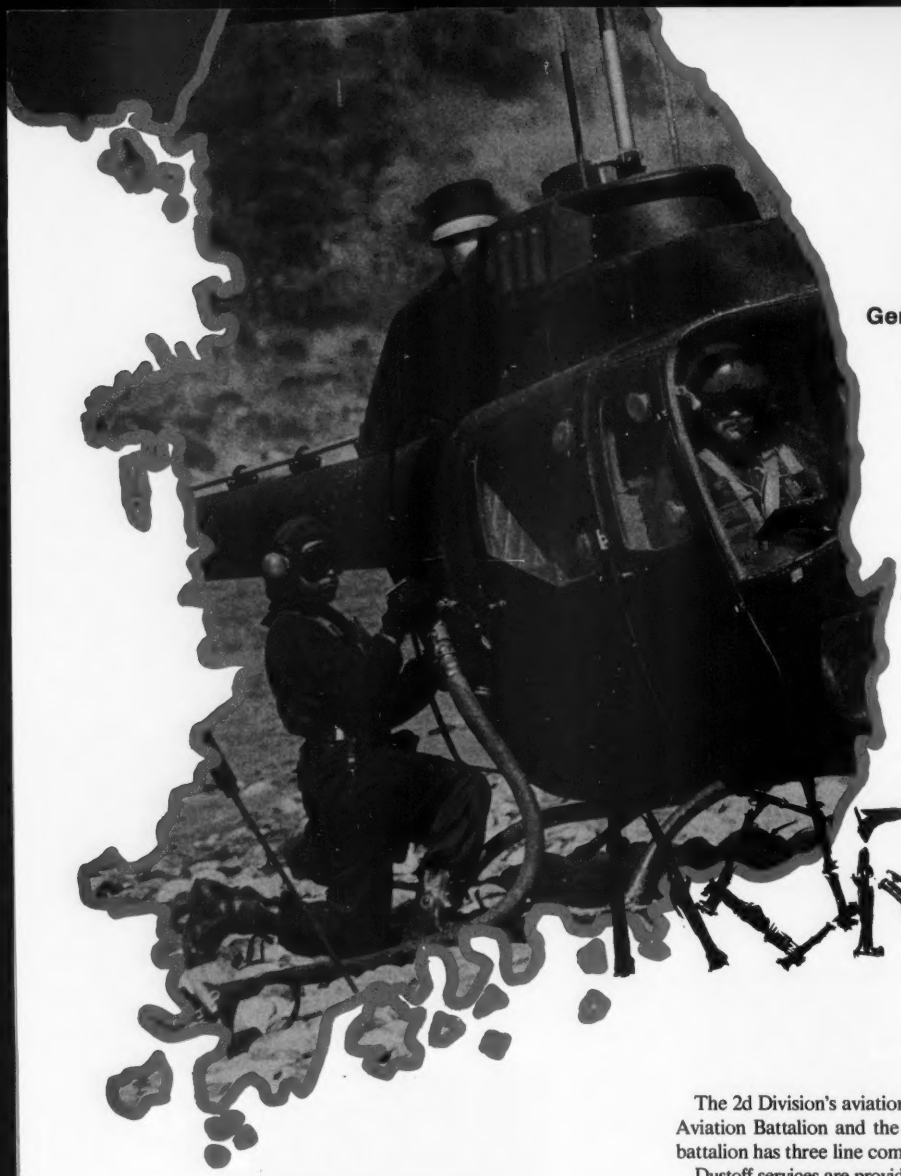
Another equally important ingredient in the Army Aviation readiness equation is that of maintenance. A glimpse of that aspect in the EUSA's mission is provided through the "45th Transportation Company." Staff Sergeant Bob Warner tells us that the members of that award-winning company, ably led by Major Mike Boyd, have a "greasy hand in keeping all of Eighth Army's fixed and rotary wing aircraft flying," providing intermediate maintenance as well as some depot capabilities. The author states, "The 45th technicians don't just stand behind their work; they'll be in it while it flies."

In the maintenance personnel area, this month we also feature a special article about the results of the Career Management Field 67 Study. Their impact on our mechanics' career field is the subject of "Aviation Maintenance" by Captain Charles Avery of the Transportation School. The study recognizes the absolute necessity for a viable CMF 67 career program if we are to have an efficient aviation maintenance effort.

Career influencing factors of yet another group of people equally essential to our strength, our aviation warrant officers, are reviewed by Major Gordon L. Rogers and Chief Warrant Officer, CW3, Orion T. King. You'll want to read their interesting, albeit disturbing, "Aviation Warrant Officer Retention: The Factors Which Influence The Decision To Leave." The recent ARI study findings summarized therein have contributed significantly to many changes and improvements in warrant officer career management and assignment policies.

Finally, more good news in the senior ranks of Army Aviation this month with three additional Army aviators nominated by the President for promotion to lieutenant general. Major General Jack V. Mackmull, commanding general, 101st Airborne Division (Air Assault), has been selected to become the commanding general, XVIII Airborne Corps and Ft. Bragg, NC. Major General Harold F. Stone has already been assigned as deputy commanding general of TRADOC, moving there from his position as commander, 9th Infantry Division and Ft. Lewis, WA. Major General John N. Brandenburg, director, Operations, J-3, USREDCOM, MacDill Air Force Base, FL, will become the commanding general of the I Corps, Ft. Lewis.

Major General Carl H. McNair Jr.
Commander, U.S. Army Aviation Center
Fort Rucker, AL



General John A. Wickham Jr.
Commanding General
Eighth United States Army
United States Forces Korea

ARMY AVIATION in the Republic of KOREA

Eighth U.S. Army's (EUSA's) aviation support is structured in three main groupings—the 17th Aviation Group (Combat), 2d Infantry Division and miscellaneous assets. The 17th Aviation Group, the largest, is commanded by Colonel Michael Bissell, who is dual-hatted as the U.S. Forces Korea/EUSA aviation officer. Under the 17th Aviation Group is the 52d Aviation Battalion with a headquarters and headquarters (HHQ) detachment, the 55th Aviation Company (Army), 201st Aviation Company (Assault Hel) and 128th Aviation Company (Assault Hel), and the 19th Aviation Battalion (Combat with an HHQ Detachment, 213th Aviation Company (Assault Support Hel) and 271st Aviation Company (Assault Support Hel).

The 2d Division's aviation assets are grouped under the 2d Aviation Battalion and the 4th Squadron, 7th Cavalry. The battalion has three line companies and maintenance suppot.

Dustoff services are provided by the 377th Medical Company (Air Ambulance), while aerial surveillance is conducted by the 146th Army Security Agency Company. The Far East District Engineers also own and operate two aircraft. Non-divisional maintenance and limited depot support is provided by the 4th Transportation Company of the 19th Support Command. The 125th Air Traffic Control Battalion of the 1st Signal Brigade (USACC) supplies tower, flight following and other air traffic control services. The 146th Military Intelligence Battalion of the 501st Military Intelligence Group provides aerial signal and imagery intelligence for the command. The battalion also trains with Republic of Korea Aviation with resulting benefits in standardization, safety, logistics and maintenance.

United States Forces and the Armed Forces of the Republic of Korea (ROK) have watched over troubled peace since the 1953 Armistice Agreement brought a cease-fire in the Korean War. Attempts then to settle the political issues which led to that 3-year conflict failed. The north has continued to rebuff all subsequent efforts to reduce tensions and insists on unification on its own terms. Thus, Korea remains a divided peninsula, its centuries of unity disrupted by differences in ideology and national objectives. Contact between south and north is cut by a 4,000-meter wide demilitarized zone (DMZ) intended to hold apart the opposing forces.

In the south, the dynamics of a free people foster an economic development that is a model for other emerging industrial nations. Across the DMZ, however, the regime of Kim Il-Sung, the only ruler North Korea has ever known, remains closed, hostile and bristling with offensive military might. Foiled in his 1950 attempt to overrun the south by force of arms, Kim and his heir apparent son nevertheless still aspire to extend North Korean rule over the entire peninsula. The potential use of armed force to obtain this objective cannot be ignored. This is evidenced in the buildup, at great cost to the North Korean people, of a large, offensively oriented and intensely trained combined arms force poised close to the DMZ.

Opposing this North Korean military power are the combined forces of the Republic and the United States. Their primary mission is to deter an attack; they are prepared to defend the ROK if the deterrence should fail.

The U.S. Forces Korea and the ROK Armed Forces make an effective combined and joint team. Eighth U.S. Army (EUSA) Aviation has an essential role within that team—both in the deterrent and in assuring a successful defense.

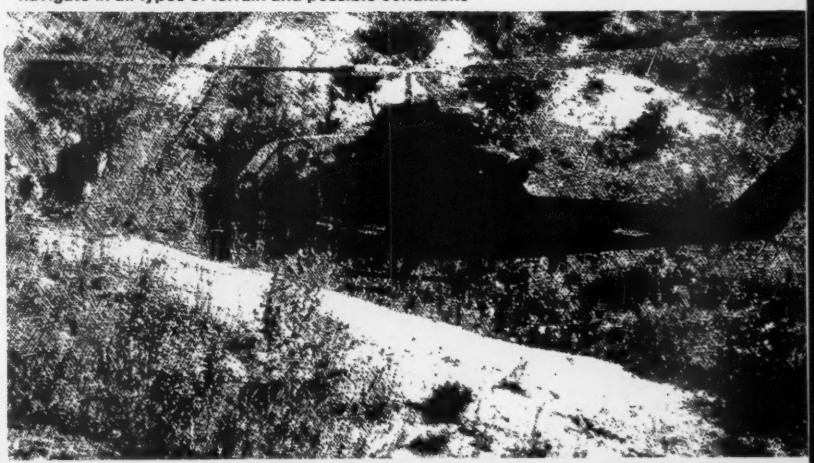
Army Aviation fulfills two key tasks in Korea. First, it provides the traditional types of support to deployed combat forces—command, control and communications, intelligence collection, utility lift and firepower mobility. Second, Army Aviation performs a leadership and training role for the developing ROK Army (ROKA) Aviation. We share knowledge on training, safety, maintenance and logistics. In addition, we fly together in tactical training. Thus, by example, U.S. Army Aviation in Korea contributes to improved combat capability of ROKA Aviation as it expands.

The capability of Army Aviation to move men and supplies where and when needed is important to the combined defense. Our combat assault units, in both the 17th Aviation Group (Combat) and the 2d Infantry Division, provide the capability to shift combat power in the event of hostilities. They also provide limited resupply capability to supplement medium lift CH-47 Chinooks which have the primary task of resupply. In war, these workhorse helicopters would have a greatly expanded role as a mover of supplies, equipment and people. The carrying capability of the Chinooks would be critical for the ROK and U.S. Forces under North Korean attack and would be used to shift combat power of any nature.

The Korean peninsula is compartmentalized and most access routes run north-south with limited east-west trafficability. The geography would channel an enemy attack and limit allied tactical options. The heavy lift helicopters would enable positioning combat power at the time and place needed to influence the tide of battle. Time would be a critical factor, for the defense concept in Korea is to meet an enemy incursion well-forward, as close to the DMZ as possible. Tactical air and concentrated artillery fires are both essential to the forward defense, but the battlefield ultimately must be controlled by the man on the ground. Army Aviation to move Soldiers and their essential support weapons and supplies will be an important means to influence the course of battle at the time and place selected.

Under current conditions of suspended hostilities, the role of Eighth Army Aviation is to train and main-

Pilots in Korea not only learn to fly in the extremes of climate, but also to navigate in all types of terrain and possible conditions



tain combat readiness posture at very high levels, so that if the units had to transition to war they would be ready for it.

Emphasis in this preparation is on interoperability with the ROK Army, both ground and aviation units. The ability to transition to war as a team requires that U.S. units be able to interface with ROK forces and have mutual confidence. This takes combined training.

Recently, the 17th Aviation Group transferred all equipment of an assault helicopter company to the ROKA. The transfer was planned in detail, so that it could be accomplished without the diminishing of combat capabilities. On a phased basis, ROKA personnel were infused into the unit to undergo familiarization with U.S. operations. It began with the designated ROKA company commander and staff and over a period of time Korean pilots, crews and maintenance personnel were integrated. Some impromptu English language lessons were included to assure full understanding. By the time the transfer was completed the ROKA crews had flown every type of mission the U.S. Army flies; they had done everything that U.S. crews do. Upon transfer of responsibility, the ROKA company was fully operational. That transfer was a big step forward in interoperability training and was a confidence builder essential to teamwork between the forces.

There are other interoperability training missions performed by the 17th Aviation Group, such as the simulated cross-FLOT (forward line of own troops) missions called "Roller Coaster." These involve multiroute penetration of the most heavily defended areas of the battlefield to insert and subsequently extract ROKA ground troops. Since 17th Group does not have gunships, gun coverage for Roller Coaster missions is provided by ROKA Hughes 500-MD helicopters. This type of combined training has created the greatest progress in ROK/U.S. aviation interoperability.

An essential factor that made this training highly successful is the bypass of language problems. Advance planning assures all know their role before a mission ever is launched. The joint detailed planning done on the ground makes airborne communications unnecessary to successful mission accomplishment. ROK and U.S. aviators and crews agree that language is not a barrier.

The cooperation between the forces is outstanding. The 17th Aviation Group takes advantage of the collective unit training time, when airmobile training is scheduled, to exercise with ROK forces. Instead of going out and moving a simulated force in empty ships, the exercises are offered to the ground force commanders, shared by the Combined Field Army (ROK/U.S.); First ROKA; Second ROKA; Third

A Korean and an American Soldier rig a UH-1H helicopter so it can ride under a large chopper on its trip from a rice paddy to a helipad

ROKA; and the ROK Capitol Corps. The group lifts four to six ROKA units each month. One or two are battalion size lifts with CH-47s also employed to move the unit's artillery. This interoperability training with supported units is being expanded to combine U.S. and ROKA Aviation assets in airlift maneuvers. This effort began with the helicopter assault company that was transferred to the ROKA, but other Korean units now are trained to similar standards and also make this type of lift with U.S. units.

ROKA Aviation has continued to fly combined airmobile exercises with the U.S. Army including placing a helicopter unit under operational control of the 17th Group commander. During field training exercise Team Spirit 1981 in March, a U.S. Army helicopter assault company was under operational control of the ROKA commander of the Orange Force. These are examples of the combined operations which take place in all areas and contribute to progress in enhancing the capability of our forces to work together for the common cause of peace and readiness for war.*

There is more to be done, to be sure. EUSA Aviation assets need—and are scheduled for—upgrading and, perhaps, some increase. The Air Cavalry Squadron in the 2d Infantry Division will exchange its AH-1G Cobra helicopters for the S model with tube-launched, optically-tracked, wire-guided (TOW) missiles. The AH-1S TOW capability will significantly enhance the anti-armor punch of the 2d Division. The importance of this is evidenced by North Korea's current three-to-one advantage in tanks over the combined U.S./ROK forces and rapid mechanization of numerically superior infantry divisions and brigades.

In the future, Eighth Army is scheduled to receive the UH-60 Black Hawk to replace the UH-1, and additional resources for aerial surveillance have been requested.

Duty in Korea, whatever one's job or rank, is challenging and essential—all the way from the DMZ to Pusan. For Army Aviation, it is all that and more. Probably no place else in the world offers the variety of conditions that is found by the aviator in Korea. From the standpoint of a well-rounded experience, Eighth Army is the best flying assignment to be found anyplace. In 1 year, aviators in Korea fly everything from sea level to mountains and all in between. They go from the dust bowl, through the fog, the snow, the monsoon winds and rains and, for a brief 3 to 4 months, enjoy relatively good flying weather. The

*The first ROKA/U.S. Army combined airmobile exercise occurred in March 1979 near Chuchon, Korea. It was called "Operation Hollywood" and was a part of exercise "Team Spirit 79." The ***Aviation Digest*** is planning an article about "Operation Hollywood" for publication in a future issue.

COL Michael Bissell (below, at right) receives the 17th Aviation Group (Combat) flag in the unit's change of command ceremony. GEN John A. Wickham Jr., Eighth U.S. Army commanding general, looks on

photograph by SSG Ken Bach

photograph by SP5 Vince Warner

Stanton Army Airfield (below left), home to the 4th Squadron, 7th Cavalry, is operational 24 hours a day, 365 days a year. Even in winter the field must be cleared and ready for operations. Snow just makes it more picturesque to the troops of the cavalry

The 17th Aviation Group is the Eighth U.S. Army's "Freedom's Eagles"

Photograph by SP5 David Polewski

four distinct seasons, the mountains and valleys, all combine to give the Army aviator in Korea a variety of challenging flying experiences.

ROK airspace is crowded. The U.S. Air Force (USAF), the ROK Air Force (ROKAF), ROKA Aviation and Eighth Army Aviation all share the skies over this relatively small peninsula. Commercial aircraft, domestic and international, add to the crowding. The high density of binational air traffic plus the great number of firing ranges and other restricted overflight areas complicate air traffic control management and operational interface with USAF and ROKAF airspace managers.

But the most important, most challenging and most dangerous flying in Korea is in and near the DMZ. The North Korean Army on the other side is potentially as hostile a foe as we face anywhere. There are other areas of the world not friendly to the United States where we could inadvertently fly across a restricted border and probably receive only a protest. Anytime an aircraft accidentally crosses the DMZ in Korea it is fired upon. Since the signing of the truce in 1953, there have been nine incidents in which U.S. and ROK helicopter and fixed wing aircraft have been shot down in the vicinity of the DMZ with a loss of seven lives, four of them American. In some cases personnel involved in these incidents were injured and captured by the North Koreans. The latest such incident occurred in 1977 when an unarmed CH-47 inadvertently crossed the DMZ into North Korea and was shot down while trying to return south. Three crewmembers were killed; one injured survivor was captured and subsequently released. In an incident in 1969 in which a U.S. Army UH-1 strayed over the north and was shot down, the three crewmembers were held captive for almost 4 months before being released. Two United States Army aviators shot down in 1963 were held for almost 1 year. Accidental overflights are technical violations of the 1953 Armistice Agreement, but the North Korean reaction is overly harsh. The situation is no different today. The north remains totally hostile. The careless aviator who strays north of the military demarcation line risks an international incident and death or almost certain capture for himself and his crew.

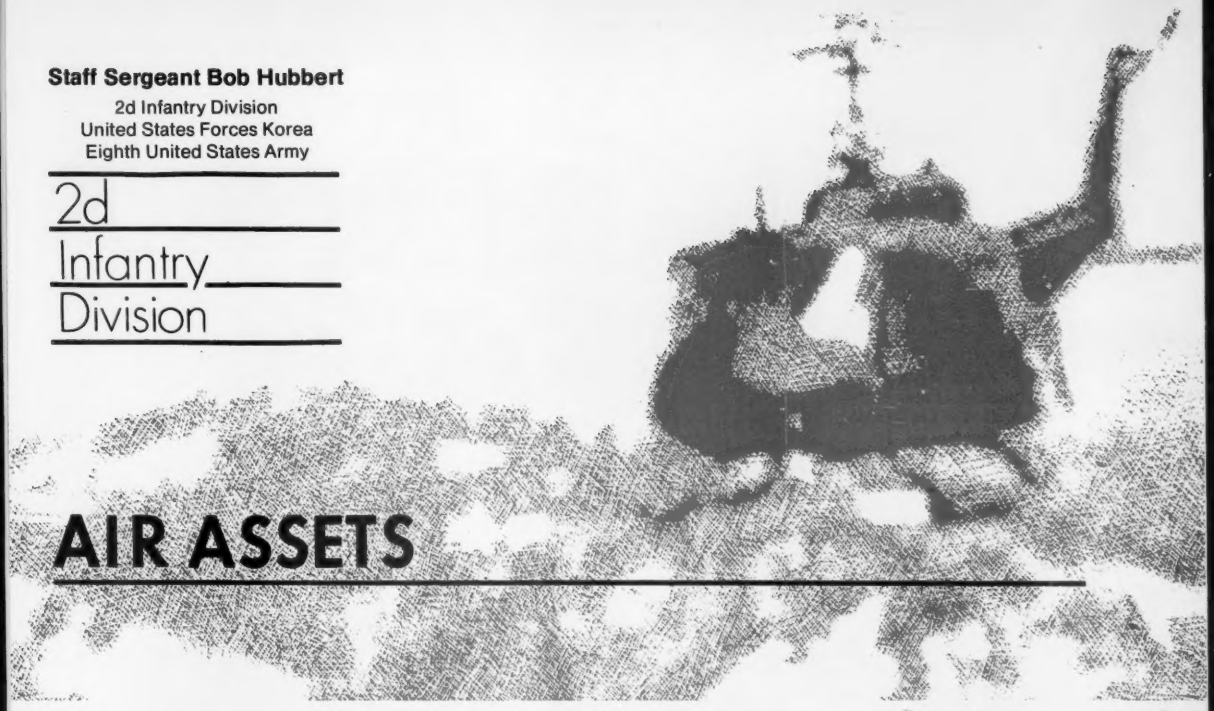
There are heavy demands on the Eighth Army aviator, on his support, and command and control. These people do a superb job. Safety and responsibility are emphasized, for essential missions must be carried out despite the hazards, adverse weather and risks. The stakes are high. The ROK is a strong ally and the 38 million people in the ROK want to remain free. Eighth Army Aviation contributes to the deterrence of war and would play a key role in the outcome on the battlefield should the deterrence fail and North Korea attack. That makes duty in Korea a real challenge for the professional.

When Company A, 2d Aviation Battalion, reached 100 percent operational readiness, all aircraft were ordered into the air for a fly-by

photograph by SP4 Val Witter

Staff Sergeant Bob Hubbert
2d Infantry Division
United States Forces Korea
Eighth United States Army

2d Infantry Division



AIR ASSETS

CAMP CASEY and Camp Garry Owen are located just a few kilometers from North Korea. Each is home to aviation assets of the 2d Infantry Division. If war should break out in Korea, the pilots of the 4th Squadron, 7th Cavalry, and the 2d Aviation Battalion would only have to get airborne to be fighting and flying on the frontlines.

The 2d Aviation Battalion is the workhorse arm of the 2d Infantry Division. The battalion's mission is to provide air assault and airmobile assets to the infantry battalions and brigades of the division. It also provides direct administrative support to other maneuver and static elements within the northern sector of South Korea.

The 2d Aviation Battalion is composed of three line companies and a headquarters company and staff. The Aviation Battalion is homebased at H220, an Army airfield located in the middle of Tongduchon, the small city surrounding Headquarters, 2d Infantry Division, at Camp Casey. North Korea is only 13 air miles up the road from Tongduchon and Camp Casey.

Because the threat of a North Korean invasion is real, the pilots of the aviation battalion train for every contingency mission. They fly daylight as well as night flight missions on a regular basis.

The 2d Aviation Battalion is commanded by Lieutenant Colonel Jack D. Ragsdale Jr., an 18-year Army veteran pilot. Colonel Ragsdale's primary mission is to keep his birds in the air and available for any mission. He keys his battalion's flight-ready posture toward maintenance. His efforts paid off when one of his line units, Company A, recently reached the battle-ready posture of 100 percent operational readiness. Every bird assigned to the unit was "up." The battalion is assigned OH-58 Kiowa and UH-1H Huey aircraft. The 2d Aviation Battalion has always maintained a higher percentage of flyable aircraft than the Department of the Army standard. When Company A reached its 100 percent status, the other units responded by spiritedly doubling their efforts to reach the same readiness posture.

An average pilot in the 2d Aviation Battalion has 8.9 years of flying experience and has logged 2,030 hours of flying time. Forty-eight of the pilots have combat experience, which equates to the average combat pilot logging more than 800 hours flying time during combat missions.

The 2d Aviation Battalion flew 7,902 missions in 1980, an average of 151 missions each week and more than 660 missions each month. During periods of intensified division training, the figures and missions escalate. The battalion logged more than 18,000 hours in the air in 1980, and already is well ahead of that flight-time pace in 1981.

RIGHT: Sometimes the weather gets nasty outside, but inside crews work around-the-clock, regardless of weather conditions, to ensure that the aviation assets of the 2d Infantry Division are up, and flyable

BELOW: Rapid deployment and air assault is one of the many missions of the 2d Aviation Battalion

The battalion's many missions in the vicinity of the demilitarized zone (DMZ) require special "buffer zone" clearance. South of the DMZ, United States and Republic of Korea air defense and artillery units stand ready to shoot down any unauthorized air traffic. North of the truce zone, the North Korean guns await the unwary aviator who makes a navigational error.

For a mission into the zone, pilots must fly through a "time window." Estimated times of arrival (ETA) and estimated times of departure (ETD) are given to control personnel within the zone. Aircraft commanders must fly through a tightly controlled air route, into the zone and land within minutes of their ETA. This flight information and regular or extended groundtime are passed to air defense artillery and artillery units.

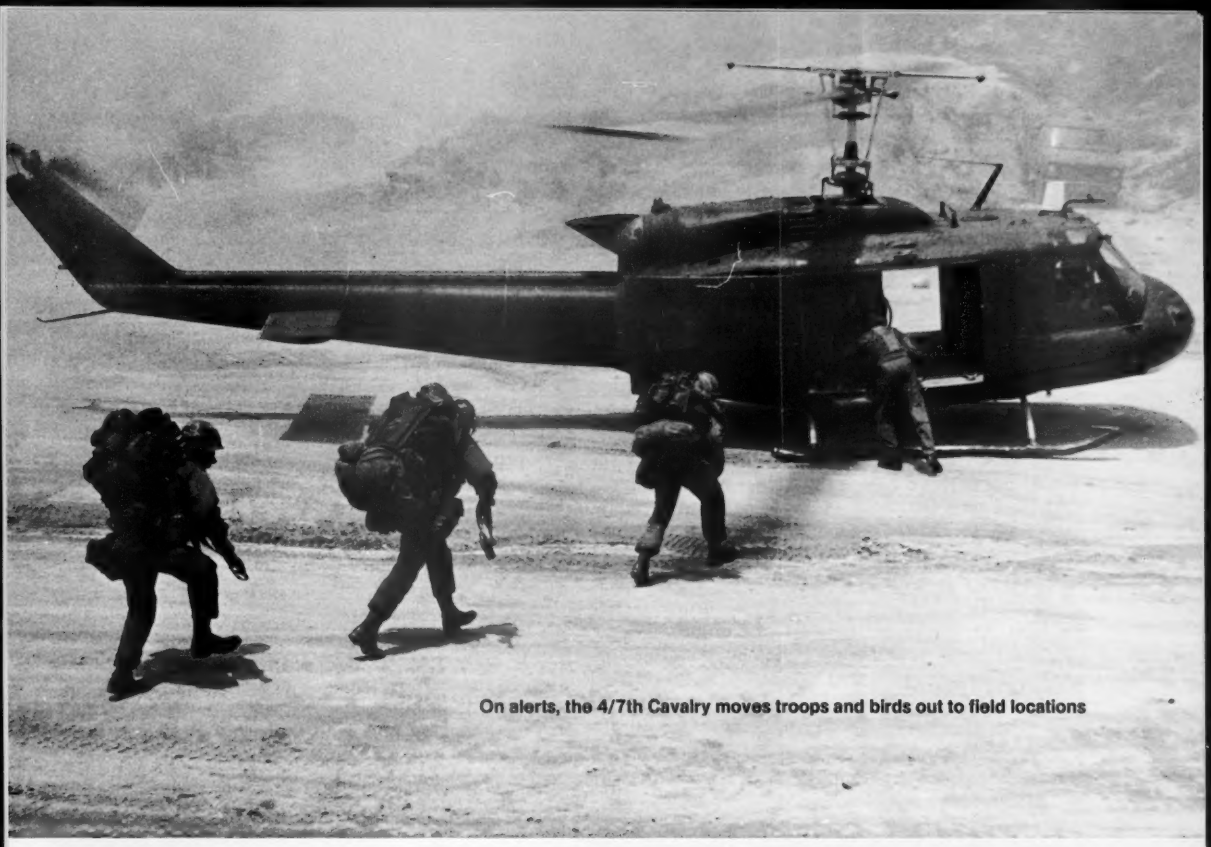
For these flights, at least one pilot aboard each aircraft must be "zone" qualified. This qualification process includes long periods of intensified training that includes extended classes (classroom and aerial observation) on terrain and terrain features, landmarks, checkpoints, flight routes and landing zones. Additionally, pilots must be familiar with night flight procedures within and around the zone. Flights into the zone are tightly controlled. Because the situation in Korea remains tense, each flight is carefully screened to ensure that it is mission essential.

The battalion flies regular resupply missions into the northern areas. Additionally, they are tasked with transporting select personnel to make on-the-ground inspections of radar sites strung out along the little strip of land that divides Korea.

To enhance pilot development and professionalism, the 2d Aviation Battalion recently began a program of intensified night training. Newly issued night vision goggles are now being used by pilots and they are becoming acquainted with procedures required to fly by amplified existing light. The pilots of the 2d spend many hours familiarizing themselves with the terrain of Korea. Says Colonel Ragsdale, "It's a lot easier to go to war on terrain you're familiar with. Our flights are like dress rehearsals. This country presents the total extremes of climatic conditions that any aviator would ever face; hot humid summers to the dead cold of winter. We know our terrain and fly in the weather. As combat ready aviators, this is all we could hope for."

The motto of the 2d Infantry Division is to "Think War." The 2d Aviation Battalion personifies that concept. Colonel Ragsdale, pilots and mechanics run at least 20 miles each week, and the runs are augmented by long hours of other intensified physical training. Colonel Ragsdale insists, "We've not only got to be fit to fight, but fit to fly."

Although the unit has many com-



On alerts, the 4/7th Cavalry moves troops and birds out to field locations

bat veteran pilots, Colonel Ragsdale enthusiastically welcomes newly graduated aviators to the unit. Ideally, the 2d Aviation Battalion is the best place to enhance pilot skills and training. "An assignment here for a new aviator exposes him to almost every flying condition that he'll face in the world," says the colonel. "Korea has mountains, flatlands, rice paddies and oceans. New aviators can get more experience here in a year than they can get anywhere else. I've seen them newly assigned to units in Europe, Vietnam and the United States. But Korea offers them more; here they can quickly mature and gain valuable experience."

The attitude and enthusiasm of the pilots and troops assigned to the 2d Aviation Battalion are exemplary. Colonel Ragsdale pointed out that although living and working conditions are sometimes hard, his troops continue professionally with the mission. Mechanics work in hangars where temperatures frequently fall below zero in the winter. In summer, temperatures in excess of 90 degrees are considered normal. But military enthusiasm and courtesy are always present. It's all part of the challenge of Korea—the jobs are challenging and the mission is real.

"We 'Think War'; we train on the terrain we're expected to fight on. We're going to survive by using nap-of-the-earth and low level flight techniques. We're here to do a real world mission, and that's what makes Korea great. From privates to first sergeants, lieutenants to lieutenant colonels, we're here to support the division. That's the foremost thought in our minds. We never know when our support will be lifesaving and the key to victory in the next war. We'll be ready," asserts Colonel Ragsdale.

The other "half" of the 2d Infantry Division's air assets belong to the 4th Squadron, 7th Cavalry. The unit is headquartered at Camp Garry Owen in Korea's Western Corridor.

The 4/7th Cav is composed of four troops and a headquarters element and troop. HHT and Alpha Troop are with the command element at Camp Garry Owen, while C and D Troops are at the squadron's command airfield, Camp Stanton. The remaining troop is located at Camp Stanley.

The 4/7th is assigned AH-1G Cobra attack helicopters, OH-58 scouts and UH-1Hs. Additionally, the squadron is augmented with a TOE (table of organization and equipment) complement of M48A5 tanks, M113 armored personnel carriers (APCs), 4.2 mortars and TOW (tube-launched, optically-tracked, wire-guided) missile launchers mounted on APCs. Almost one-third of the pilots assigned to the squadron have combat experience —a key factor when considering the mission of the Cav and the real

threat of war in Korea. Another 33 percent of the pilots assigned to the squadron are on their initial tours after completion of flight school. But, like the pilots in the 2d Aviation Battalion, they couldn't have come to a better place to further enhance their flight skills. As a maneuver arm of the 2d Infantry Division, the 4/7th Cav offers new pilots every conceivable flying condition and terrain feature over which to navigate and fly. When pilots leave Korea they are seasoned veterans.

In fiscal year 1980, the squadron flew more than 17,200 hours. It was in the air frequently in support of intensified training within the division. In the first 8 months of this fiscal year, the squadron has logged more than 11,450 hours. When called out on division alerts, the 4/7th Cav must be airborne and in position to fire or secure terrain rapidly. Additionally, the squadron must fly "backwards" when on alert because they are located only 7 kilometers from Korea's DMZ. Training, usually, is to the south of their home base position.

The mission of the Cav is multifold. In addition to being the airborne "eyes and ears" of the division, it regularly runs aerial reconnaissance and security patrols along the DMZ. Additionally, the Cav is expected to take a major offensive as well as a delaying role in any conflict in Korea. If war should erupt, the Cav will be on the line either supporting the withdrawal of military and civilian personnel, or counterattacking. In a counterattack, the Cav would join forces with seasoned units from the Republic of Korea.

The Cav maintains a 24-hour quick reaction force (QRF). The personnel assigned QRF duty remain onsite at an airfield (be it permanent or a field location) and are ready to react within minutes of being given a warning order or confirmed mission. The QRF can either extract personnel from any given location, assault terrain and secure it, or cover the movements of Allied personnel in a withdrawal. The QRF trains as both an airborne and ground element. Additionally, the QRF maintains an aerial reconnaissance platoon whose mission it is to survey key terrain and areas of interest for division commanders. Training is conducted both day and night.

The Cav regularly practices for any contingency mission. Its members have refined their skills to the point where they can now respond to any situation quickly and confidently. Says Lieutenant Colonel Turner "Gene" Grimsley, squadron commander, "Within 30 minutes we can be onstation in Seoul (the capital of the Republic of Korea), or in 15 minutes we can be putting fire on targets in North Korea. When the mission comes down, we can be armed in a moment and ready to fight. We're prepared for war, and my men know that during their tours in Korea, war is a believable eventuality."

Colonel Grimsley, an 18-year Army veteran, served two tours in Vietnam. He makes it a point to make sure that every person assigned to the squadron knows that 7 kilometers to the front a real enemy exists.

"Shortly after each man's arrival in the squadron," says Colonel Grimsley, "he's taken up to look at the DMZ. While on this inspection 'tour,' he's taken to a forward point and shown North Korean military at work. Very quickly he becomes aware of the fact that he's standing on a potential battlefield. Without much prodding, he becomes a Soldier or pilot who thrusts himself into his job and mission. He familiarizes himself with the terrain, his assets, his job and his role in the squadron. He's ready to fight and win the next war. He's seen the other side of the mountain and knows our mission is real."

Quarterly, the Cav heads south for live fire aerial gunnery. The Cav is supported in gunnery by armored units, Air Force attack elements and artillery units. When the Cav goes "gunning," it goes to a simulated "little war." According to Colonel Grimsley, this is the best way to train.

Maintenance plays a vital role in the effectiveness of the Cav's operation in Korea. Many of the aircraft assigned to the units within the Cav are Vietnam vintage. They've been reequipped and built-up by the mechanics and technicians assigned to the troops within the squadron.

"We're on the end of the military supply line," says Colonel Grimsley, "so parts can sometimes be a problem. But it's amazing what a little will and determination, along with Yankee ingenuity, will do. In January 1981, Delta Troop went 100 percent air operational. Considering our mission and flight time logged, the feat is close to amazing. This past June, Charlie Troop was just a couple of aircraft away from reaching the same operational level. I fully expect most of my units to achieve that same position. My men know that our job is to keep our birds in the air."

The Cav trains continuously. Field maneuvers and exercises are commonplace to any and all who serve with the unit. But the men of the Cav have to be field qualified. Their mission is both offensive and defensive. Colonel Grimsley is confident that the men of his squadron will perform with distinction and effectiveness.

"I've been in a lot of aviation units throughout the world," says Colonel Grimsley, "but the 4/7th Cav is the most combat ready of them all. Maintenance and training are two overriding priorities. We keep what we have flying, as flying is our business. I personally feel that my unit is the most combat ready in the world. We're ready to go to war today."

KOREA-AIR TRAFFIC CONTROL

ARMY AVIATORS in Korea need all the help they can get. Some of their very best helpers include the "Guardians"—individuals specifically tasked to preserve and protect aviators and aircraft in Korea.

They are members of the 125th Air Traffic Control (ATC) Battalion—"Guardian to Army Aviation." It's their job to help take out the risks for Army Aviation crews who fly close to the demilitarized zone (DMZ) where the slightest navigational error can cause an intrusion into airspace that probably will draw hostile fire—or who operate in extreme weather, over mountainous terrain and in crowded skies.

Organized 1 October 1978 under the 1st Signal Brigade, the 125th consists of a headquarters and headquarters detachment and the 191st and 244th ATC companies with approximately 300 military and civilian personnel assigned to 13 sites throughout the Republic of Korea (ROK). The fixed base mission is to provide ATC services through control towers, ground controlled approach (GCA) and flight operations centers (FOCs) with subordinate flight coordination centers (FCCs). The mission of providing tactical terminal and en route ATC services for Eighth U.S. Army Aviation units is also a mainstay in the total Guardian concept in Korea.

While the towers and GCAs provide takeoff and approach services, the FOCs and FCCs operate the Army's only countrywide flight-following system.

Sensitive airspace along the DMZ requires particular and constant attention. Aircraft must be positively located at all points during flight. Any aircraft that wanders north would put itself in jeopardy in a hurry. Also, low flying helicopters operating in mountainous areas sometime suddenly appear on the scopes of the U.S. Air Force and ROK ground controlled intercept (GCI) sites. These aircraft must be identified immediately or friendly forces will unnecessarily scramble against them. Using FOCs and FCCs which have direct phone lines with the GCI sites and are in constant communication, the Guardians pass flight plan information and identify those aircraft which pop up on the intercept radar, helping to avoid such eventualities.

The mountainous terrain provides formidable communications problems for the controllers. Although the FOCs and FCCs (except Pyongtaek and Taegu) are located on mountaintop sites, there still are many times that communications with low level aircraft are nonexistent. Coordination and teamwork within the Guardian system of sites resolve these problems.

At FCCs Evenreach and Warrior, which are the only radar FCCs in the Army, the majority of the work is flight-following along the DMZ; and here they have another communication problem with the Korean pilots. Although all of them have received English training in ATC terminology, some ROK Army Avia-

tors are unsure of their language abilities and are hesitant to call in.

The FOCs have local national employees and Korean augmentees to the U.S. Army to help pass information to the Korean controllers at the GCIs and to communicate with ROK aviators.

Current projects include having ROK Army ATC controllers assigned to FCCs and FOCs for assistance and orientation in flight-following procedures at the same time.

The many training ranges used by the American and Korean Armed Forces also create a significant workload for the ATC. Information on range use is passed to all aircraft through advisories on which ranges are "hot."

Basic operations are more than enough to keep the Guardians busy, but somehow that's not enough to satisfy the 125th ATC Battalion. Its people constantly push to upgrade fixed base and tactical capabilities to help them do a better job of guarding Army Aviation.

EVENREACH ATC

Specialist Five Doug Hartman
United States Forces Korea
Eighth United States Army

WITH A DOG, a few rabbits and a two-table kitchen, Evenreach Air Traffic Control (ATC) site is "home" to a group of 10 Soldiers assigned to the 125th ATC Battalion, 1st Signal Brigade.

Evenreach is a 4,816-foot mountain-top site situated some 4 miles of eroded, winding road from the nearest village and a few miles from the demilitarized zone (DMZ). Many may not consider it a choice assignment—more like a lonely outpost far from the excitement of the city's theaters, taxis and telephones. But this family, as the Soldiers who work there call themselves—bonded by trust, cooperation and friendship—is satisfied with its spartan existence.

"We're not only a miniature company here, but we're also a happy family," said Staff Sergeant Pratt H. Branch, ATC facility chief. To him, the attitude of the six ATC specialists, one cook and three electronic engineers who live and work at Evenreach make it like a home-away-from-home.

That attitude also reflects on troop morale, according to Frank Smeriglio, 1st Signal Brigade training branch inspector. "Morale among the troops stationed at the site is unbelievably high. An assignment like this gives the Soldiers a feeling that they're valuable and their contributions are needed."

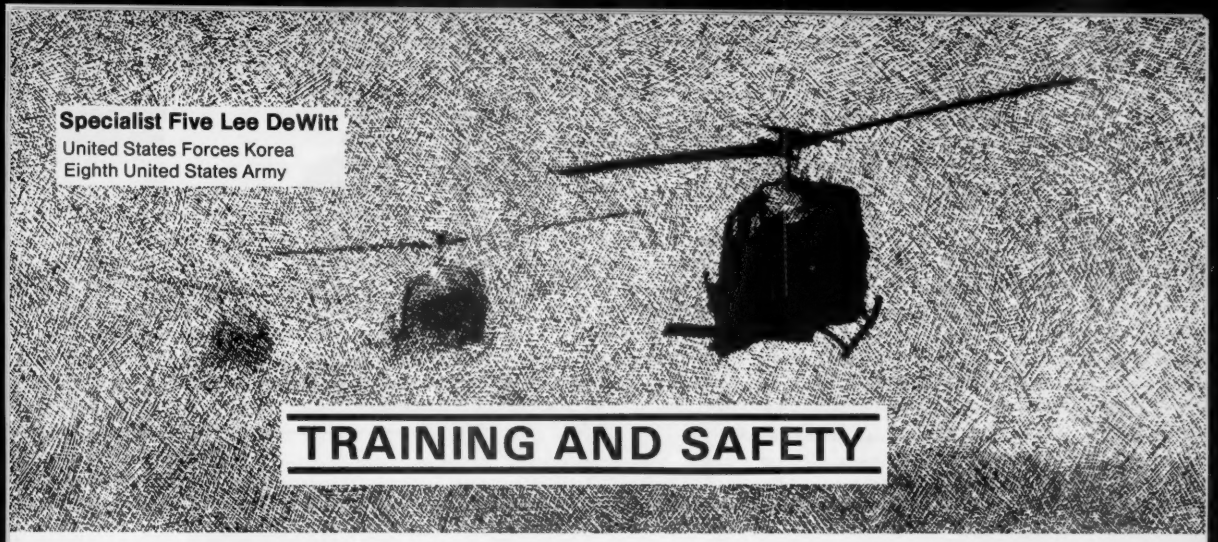
The place of work for the ATC specialists is just another room in this multifunctional, one-building home. Duty is arranged in shifts since the flight coordination center is staffed 24 hours daily. This duty entails providing flight-following services to pilots flying along the demilitarized zone.

When not working, the Soldiers spend the majority of time in the living room. Against one wall is a bookshelf containing hundreds of paperbacks and against another are shelves of Army Training Extension Courses and other related films. Incidentally, Mr. Smeriglio said ATC personnel score notably high on skill qualification tests and other training evaluations.

Across the living room is the small kitchen. The cook, Specialist Five Linda L. Brady, is part of the family—not one who's seen only during the three meals but one who shares additional duties and participates in the mountaintop chores.

Down the hall at the flight coordination center, a Soldier's voice echoes through the building. A pilot has radioed that he will be landing at Evenreach. Almost immediately, coffee starts brewing as this "family" is anxious to welcome today's only visitor.

Specialist Five Lee DeWitt
United States Forces Korea
Eighth United States Army



TRAINING AND SAFETY

THERE IS ONE salient characteristic which contributes to the Eighth U.S. Army Aviation's ability to effectively transition to a wartime posture. It is a characteristic that Army aviators share with the ground troops they move and otherwise support. They both train in the very areas where they might have to fight. The limited territory of the Republic of Korea (ROK) and the northern location of major training ranges create an exercise realism almost impossible to duplicate elsewhere.

Major David W. Kummer, deputy Eighth U.S. Army Aviation officer, summed up the situation: "It is possible to make every training mission a mission to go to war."

One such training exercise, dubbed "roller coaster" because of its stomach twisting, nap-of-the-earth flights, is used for high priority missions with limited strike forces. Roller coaster exercises are simulated missions cross-FLOT (forward line of own troops) conducted at very low altitudes using multiple routes. Once behind the enemy FLOT, the flights converge at the landing zone, insert the strike force and a few minutes later extract them.

Roller coasters are often conducted together with ROK pilots and almost always with Korean gunships providing cover. Combined exercises are nothing new to members of the Eighth U.S. Army Aviation team. Interoperability has become an integral part of its preparations for the possibilities of war and a significant ingredient in the Army air arm's credibility as a deterrent force.

Combined United States/ROK airmobile exercises aptly reflect Eighth Army Aviation's ability and commitment to readiness. These are in addition to normal individual and collective-unit training such as skills qualification testing and Army training and evaluation programs. On a broader scale, the aviation units participate in annual exercises such as the Team Spirit series, Foal Eagle and Ulchi-Focus Lens in which they support a major headquarters. Even though these exercises are not specifically designed for the aviation elements, the realistic training received from them is valuable.

Hand in hand with realism and a sense of urgency in aviation workouts, the Eighth Army Aviation has stressed safety. The result has been a very good record which Major Kummer surmised as being "one of the best records in the Army." Due to careful planning and reconnaissance of routes and training areas, commanders are able to conduct realistic training despite an environment characterized by high density air traffic, proximity to hazardous flying and prohibited areas, and to still maintain an outstanding safety record. He said, "Essentially, we don't use safety as a means to avoid training; we plan meaningful training with safety in mind."

In Korea there is also a threat from high-tension powerlines which Major Kummer described as "mind boggling." He noted, "If you consider our very low level, just above the treetop flights and sometimes below the treetop flights if the opening permits, the wire hazards for us are very real. A look at the Army Aviation safety history will show that we have lost an enormous number of aircraft over the years due to wire strikes." According to the major, Eighth Army's OH-58 Kiowas are being equipped with a new wire-protection system; other helicopters are expected to have a similar safety device designed for them in the near future.

When Army aviators consider the fine safety record, readiness posture and the challenge of training in Korea, they will very likely agree with Major Kummer that Korea has "the best training environment in the world."

45th TRANSPORTATION COMPANY

Staff Sergeant Bob Warner
19th Support Command
United States Forces Korea
Eighth United States Army

THERE ARE MANY and varied risks for Army aviators flying in Korea. Mountains, rivers and lakes—fog, snow, dust and the monsoon winds and rains—crowded skies—and a hostile enemy with itchy, accurate trigger fingers bellied up to the demilitarized zone (DMZ), make flying in Korea a job only for professionals. But thanks to one of Eighth Army's busiest units—the 45th Transportation Company (AVIM) of the 194th Maintenance Battalion, 19th Support Command, concern about quality of maintenance support does not have to be high on any aviator's list.

Located at Camp Humphreys, about an hour's drive south of Seoul, the 45th Transportation Company has a greasy hand in keeping all of Eighth Army's fixed and rotary wing aircraft flying. With less than 400 men and women, Army and civilian, American and Korean, the 45th performs all aviation intermediate maintenance (AVIM) for the more than 350 nondivisional aircraft it directly supports—and it provides backup to the aviation units of the 2d Infantry Division. The 45th also provides limited depot capabilities.

According to company commander, Major Michael F. Boyd, 45th Trans is a multimillion dollar operation with some $8 million in parts on hand and another $1½ to $2 million on order to support maintenance on CH-47 Chinook, UH-1 Huey, OH-58 Kiowa, OV-1 Mohawk, U-21 Ute and C-12 Huron aircraft.

The 45th's technicians even pull some depot level maintenance on the components and electrical systems of these aircraft. The importance of this capability is evidenced by the fact that the next available level of maintenance is no closer than Corpus Christi Army Depot in Texas.

"Can Do Easy" is the motto of the 45th Trans, and every member of the company really tries to live up to it. Pride and professionalism are what make this company something special—they do their jobs and more.

The avionics shop, for instance, is unlike any other Army facility in the United States or Europe. "The difference is the degree of maintenance we go into," explained Sergeant First Class Gerald Brison. "We're the last stop in Korea. If we can't handle it here, it has to go back virtually to the factory to be stripped down and completely rebuilt." The avionics section has only 51 people; but they handle not only second, third and partial fourth echelon maintenance but also are to the point of pulling depot on some equipment. "These guys go well beyond what's taught in the course back in the states," noted Sergeant Brison, himself a former instructor at the Army Aviation Center. He said he'd "have some news" for the avionics instructors when he gets back about "just how much can be done out in the field."

The extent of the repairs carried out by the 45th Trans saves a considerable amount of money, most of it in deferred costs by eliminating the downtime that would be incurred if the part had to be shipped to the United States for repair. Warrant Officer, WO1, George Haddox, avionics section chief, estimates "an 80 to 90 percent saving" results from local repair.

Avionics is not the only company shop saving money by getting the job done in Korea. The service shop platoon has its special skills,

too. "We have our own assembly line here," explained Sergeant First Class Arthur Stephens, platoon sergeant. "We can make everything the aircraft needs . . . and we do it by hand." The hydraulic shop can make any type of lines and put on any type of ends needed. O-rings are put into the components and turbos and hydraulic lines are fabricated out of tubes. "They (the customers) give us an example of what they want and we turn it into a brand-new line," Sergeant Stephens said.

The sheet metal shop has an assembly line that makes not only parts but even some special tools that are needed for the company's various jobs. Typical items fabricated are panels for chopper skins, landing light covers for night vision goggles, O-rings and special tools not in the unit's supply system. They are made with the help of machines that date back to World War II but spring to new life at the talented touch of the company's sheet metal workers, most of them long-time Korean civilian employees.

The importance of Army Aviation with a hostile enemy not far away requires an around-the-clock availability of parts to keep aircraft operational. The aviation direct support supply unit (ADSSU) provides 24-hour-a-day, 7-day-a-week oncall service, as it supplies every component and part used on U.S. Army aircraft throughout the peninsula. The ADSSU has an authorized stockage list of about 3,000 line items and handles about 2,500 requisitions each month. New DAS3 computers are due in that will make the system even more responsive.

The ADSSU is responsible for the aviation intensively managed item (AIMI) program—high value, critical parts such as engines, transmissions, etc., which are bid for competitively by both the Government and commercial agencies.

"A biannual conference held at St. Louis, MO, establishes items on the AIMI list which may change every 6 months—increase or decrease—due to supply and demand on the market," explained Mr. Frank Unten, a Department of the Army civilian who manages the AIMI program in the ADSSU. "The items on this list, currently near 100, have to be intensely managed, as they may become seriously short from time to time, being the same type parts and equipment that commercial enterprises also need," he said.

Two major missions take the 45th Transportation Company's technicians almost anywhere in Korea. Its contact teams, comprised of personnel from the various technical platoons, are sent out on call from customer units. The teams are put together to meet specific maintenance needs and remain onsite for periods of 1 day to 2 weeks. A dramatic savings in downtime for the customer results from this service. Also, when an aircraft does go down, the 45th Trans is responsible for its recovery. (This does not, of course, include those which accidentally stray across the DMZ and are shot down inside North Korean territory.) The company's recovery section is sent out, evaluates the damage or mechanical problem and then makes the recovery. According to Major Boyd, the priorities on recovery are, first, to try to fix the damaged craft on the ground and fly it out. If that cannot be done, the recovery team prepares the craft for lift onto a tractor trailer and return to Camp Humphreys for repair. The last priority, but an essential one in Korea's mountainous terrain, is to prepare the downed craft for air recovery. The lift will be made either by one of the company's three UH-1s or by calling in a CH-47.

Statistics compiled in the production control office indicate not only the extent of the 45th Transportation Company's mission but demonstrate how well all jobs are accomplished.

The average monthly work order completion totals about 550, with an estimated 126,000 manhours expended on maintenance of aircraft. The turnaround time for maintenance is 6 to 7 days. Work orders on components average 600 each month with some 4,000 manhours needed for their completion, which averages 4 days for turnaround. "In an average year," said Major Boyd, "we will repair about 850 aircraft and 6,000 components, and handle some 370 modification work orders and process more than 24,000 requisitions."

That's a lot of work for any unit; and in the 45th Transportation Company it's quality work. That is evidenced by the overall excellent aviation safety record enjoyed by Eighth Army despite some of the toughest conditions for Soldiers and their flying machines to be found anywhere Army aviators serve. The company has received two Awards of Honor for Safety from the U.S. Army Safety Center at Ft. Rucker.

"Quality control is the final step," stated Chief Warrant Officer, CW4, Robert J. Mamino. "All of the work is inspected prior to going out to make sure the aircraft is 100 percent ready to be airborne." The 45th's technicians don't just stand behind their work; they'll be in it while it flies.

Like the Army Aviation units they support, the company has interoperability training with the Republic of Korea Army (ROKA). A number of Korean military and civilians work on a rotation basis at the 45th Trans in almost all operations from the ever-present paperwork to the exacting overhaul of Chinook, Huey and Mohawk engines. There are some differences in the U.S. Army and ROKA maintenance systems, and the Korean personnel are studying the relative advantages of each. Their presence gives the 45th some welcome extra hands in meeting the workload that is the responsibility of the biggest little unit in Eighth Army.

Setting the stage for winter

U.S. ARMY SAFETY CENTER

THE WHITE, POWDERY floor went dark as the lights were dimmed for the night performance soon to begin. Shortly, a hush fell over the audience as the silhouette of a youthful ballerina appeared from seemingly nowhere and gracefully began to glide over the snow-like substance. From offstage, a wind of varying intensity blew white flakes against the form, swirling them about her body. Undaunted, she continued her advance. Suddenly she faltered, stopped, then began to retrace her steps, moving backwards. With all eyes upon her, she started to pirouette, but after completing only three turns, she lost her equilibrium and went sprawling into the scenery where she collapsed. The show was over.

No, this is not a description of some aborted ballet performance. In reality, the white, powdery floor referred to was the cold, hard, snow-covered ground; the hour, sometime during the darkness of the night; the audience, a handful of witnesses; the ballerina, an OH-58; and the scenery, trees. In brief, this is what happened:

While en route to a refueling point during a night training mission, the crew of an OH-58 spotted another aircraft on the ground about 1,500 meters from the field site. Concerned about it and the safety of its crew, the pilot decided to land nearby and investigate. After determining the downed aircraft apparently had an engine malfunction and assistance was on the way, he returned to his aircraft to continue his mission.

As he climbed aboard, the copilot informed him of radio problems that affected not only their transmitter and receiver but also their intercom system. After trying to resolve these problems with only partial success, the pilot switched on the landing light and lifted the helicopter to a hover. Before takeoff could be continued, the copilot suggested they remain in the area to guide recovery personnel who were approaching the downed aircraft in a ground vehicle. The pilot agreed.

As the aircraft continued to hover, blowing snow created a whiteout condition that was intensified by the glare from the light reflecting off it. The pilot promptly switched off the landing light, regaining limited visibility. However, it was not sufficient for him to immediately notice the aircraft had begun to drift backwards. Shortly afterwards, the copilot realized they were moving rearward, but because of the intercom problem, he was not able to warn the pilot in time to prevent the tail rotor from striking some trees.

When contact was made with the trees, the aircraft pivoted over them and began to spin to the right. As the pilot rolled off throttle and applied collective, the aircraft completed its third revolution about its vertical axis and settled into the trees. The two pilots and the crew chief

exited the aircraft without assistance.

Analysis of the events that led to this mishap revealed that when the aircraft was hovered 5 to 10 feet above the ground, the loose snow was recirculated through the rotor system, reducing the pilot's ability to see. This loss of visibility was further aggravated by the intermittent use of the landing light. The end result was disorientation and a mishap.

Yet, both pilots had ample experience. The PIC had logged more than 1,000 hours of rotary wing flight, more than 500 of which were in the OH-58. The copilot had flown approximately 1,600 hours in rotary wing aircraft, with more than 600 of them in the OH-58. Yet flight experience alone is not always sufficient. Proficiency in the type of mission being flown is especially important. In this instance, the pilot had been recommended for additional night training after he had completed a standardization ride more than 5 months before this mishap occurred. He had not received this training.

But even the combination of experience and proficiency can be nullified by a single human frailty—overconfidence. Consider the pilot of another OH-58 who found himself in a situation much akin to the one described. Again, the prevailing conditions included darkness and snow-covered ground.

In this instance, the pilot was flying the No. 2 aircraft in a flight of five. The lead aircraft had landed at a field site where an inverted Y and a jeep with a rotating yellow beacon served as the only night landing aids. On landing, the pilot of the lead aircraft notified the others that a blowing snow condition existed in the LZ.

The pilot of the second aircraft landed without incident. He then picked up his aircraft to move it and make room for the remaining aircraft still in flight. In repositioning his aircraft, he made a right pedal turn and began a forward hover. Simultaneously, the rotorwash recirculated the snow, causing him to lose ground reference and begin drifting to the left. As he applied collective, the left skid dug into the ground, causing the aircraft to roll onto its left side. The pilot was not hurt, but the crew chief sustained a minor injury to his knee.

This pilot had logged almost 1,100 rotary wing hours, with more than 500 of them in the OH-58. He was also proficient in night operations over snow. In fact, he had been routinely flying under recirculating snow conditions for 3 days without difficulty and believed he was capable of coping with this kind of environment. As a result, he had not developed a full appreciation for the probability of inadvertently encountering a loss of outside visual references. By his own admission, he was caught by surprise when it happened.

Although he had been warned of the recirculating snow conditions in the LZ, the pilot hovered his aircraft at 2 to 5 knots and 2 to 5 feet agl instead of using an airspeed just above translational lift or a high hover as prescribed by TC 1-137.

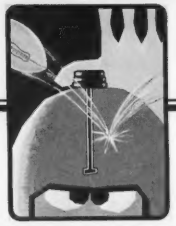
While it may not have played an active role in causing this mishap, the fatigue factor cannot be discounted. The flight had initially been delayed for more than 1½ hours because of a snowstorm, and the pilot was aware that any further flight on his part during the hours of darkness would probably exceed day/night crew rest flight limits. However, he was concerned about the lack of suitable RON facilities and, after considerable deliberation, decided to continue to the unit LZ.

In summation, these types of mishaps can be prevented by effective unit training programs that would ensure pilots are knowledgeable and capable of safely operating aircraft over snow-covered terrain. Units operating in snow environments should establish night training programs that prescribe night hourly goals and include tasks required to be performed at night by TC 1-137. Unit members should also be familiar with the information contained in FM 1-51.

Although safety during flight operations over snow-covered ground is of prime importance, it is not the only area to be considered. Other winter hazards include those associated with icing and static electricity, to name a couple. In addition, cold weather survival training, the necessity to exercise special care when performing preflight and postflight inspections, and the need for adequate warm-up of aircraft systems before flight are all vital areas of concern.

The point is a simple one: Just as she has done for centuries, winter will once again make her appearance, and you can bet she'll bring along her full bag of tricks. Don't underestimate her. She is quite an experienced old gal and well armed. But you have the advantage. You know what she is going to hurl at you. Therefore, before she arrives is the time for you to set the stage and make yourself ready to meet her. And training, experience, proficiency and a healthy respect for her capabilities are the principal furnishings you need. All are readily available. So don't wait until you find yourself operating in a snow environment before making certain you know the hazards associated with it and how to cope with them. It's just plain good sense.

VIEWS FROM READERS



Editor:

Readers of the ***U.S. Army Aviation Digest*** are invited to become Charter Members of the newly incorporated International Test & Evaluation Association, ITEA.

ITEA is the professional society for individuals who have a common interest in the discipline of test and evaluation. ITEA's members seek to foster communication, advance the art and secure recognition for the challenging and vital role of T&E as a full partner in the work of industry, academia and Government.

ITEA's president, Dr. Allen R. Matthews, reports that chapters are already forming at Patuxent River NAS, Norfolk, Pt. Mugu, in the National Capital area, and at centers of T&E expertise across the Nation. The association plans a variety of chapter activities, professional working groups, technical meetings, international symposia and publications.

ITEA's first national symposium is now being planned for this spring in the greater Washington, DC, area. The symposium will feature keynote addresses by top Department of Defense and military spokesmen for T&E, and also will include technical sessions and a T&E tutorial.

Interested? To receive membership information and a copy of the latest ITEA newsletter, write: ITEA, ATTN: Membership Committee, P.O. Box 603, Lexington Park, MD 20653.

David A. Herrelko, Ph.D.
Chairman
National Membership Committee

Editor:

Buffalo Publishing Company is proud to send its third issue of ***Buffalo*** magazine. Deriving its name from the Buffalo Soldier, ***Buffalo*** magazine entertains, informs and provides a forum for self-expression for its readership, the Black military community, while at the same time emphasizing the values of hard work, professional competence and continuing education that are so important to success in the military profession.

Because of the widespread nature of our readership, we would ask that the ***U.S. Army Aviation Digest*** assist us in informing your readers of our existence and our need for those who would desire to contribute articles for publication concerning the Black military community. We do pay professional rates for articles published. More information may be obtained by writing us at Box 35606, Fayetteville, NC 28303.

William C. Pratt
General Manager

Editor:

We are trying to establish a library of good, quality periodicals to keep our intelligence troops up-to-date on changes which might appear on film they are reviewing.

Your periodical was one which was suggested as a good addition to our library. Please add us to your normal distribution.

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CPT Perry C. Johnson
Nebraska Air National Guard
173 Troops PPIF
Headquarters 155th Tactical
Reconnaissance Group
Lincoln, NE 68524

• National Guard units under pinpoint distribution should submit DA Form 12-5, other National Guard units should request the magazine through their state adjutant general. Annual subscriptions also are available: send a remittance of $20.00 (domestic) or $25.00 (overseas) to Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

Editor:

I missed the previous issues of the ***U.S. Army Aviation Digest*** which contained the articles, "The Flat Spin," and "Spin Awareness." Would you please send me a copy of each article. Please include a copy of the article, "How to Avoid the Vmc-Related Accident," if available.

James D. Quade
5th Signal Command
APO New York 09056

Editor:

Request, if available, a compilation of "Recognition Quiz" sections from past issues of ***Aviation Digest***.

In a continuing effort to upgrade troop unit threat training, could you provide a listing of sources/contacts capable of issuing 35 mm slides/pictures of threat/Warsaw Pact/Allied vehicles in natural settings?

CPT Ronald S. Petricka
Troop B, 2d Squadron (AIR)
10th Cavalry
Ft. Ord, CA 93941

• The copies of Recognition Quiz sections you requested are in the mail. The Threat Section article in the March 1981 issue of the *Aviation Digest* contains all of the other sources for threat information that you requested. Others wanting copies of past "Recognition Quiz" sections, or of the March 1981 issue, can obtain them by writing to Editor, *Aviation Digest*, P.O. Drawer P, Ft. Rucker, AL 36362.

Editor:

The private aviation industry must understand the Army's future plans and requirements if it is to remain or in some instances, become partners and be prepared to support this area of our national defense.

To accomplish this, the U.S. Army Aviation Research and Development Command will sponsor a 2-day series of meetings in St. Louis, MO, and is scheduled for 8 and 9 October 1981. The Advanced Planning Briefing for Industry (APBI) will be held at the Airport Marriot Hotel in St. Louis.

While those firms currently doing business with the Army Aviation community will have the opportunity to be brought up to speed at the briefing, it should be extremely helpful in cultivating new relationships, especially in the small business area.

Your assistance in spreading the word will be much appreciated.

Howard R. Gray Jr.
Acting Public Affairs Officer
HQ, AVRADCOM
4300 Goodfellow Blvd.
St. Louis, MO 63120

• Anyone interested in additional information concerning this briefing may contact the Public Affairs Office at AUTOVON 693-2268 or write to the above address.

Editor:

It is requested that the article "You and Your Map," which covered the Australian Fold Technique be forwarded to my unit. We will use the article to formulate a lesson plan for a period of map instruction.

Thank you for the time and consideration expended on this request. We do not know the month or year of the issue this article was published, but were told of its existence by the 277th Dustoff Detachment commander.

MAJ John L. Kosinski, USMC
Detachment Marine Air Base
Squadron II
Third Marine Aircraft Wing,
FMFPac
Twentynine Palms, CA 92278

• The article you referred to is "The Tactical Map and You. . .," and was last published in the February 1979 issue of the *Aviation Digest*. A copy has been mailed to you.

Editor:

HAL-4 is developing a night vision goggle program for its flight crews. An excellent article on how to predict brightness on clear nights for tactical operations appeared in the September 1976 issue of the ***U.S. Army Aviation Digest***. The title is unknown to us. If possible a photocopy of that article would be greatly appreciated. Thank you.

T. A. Wall
Helicopter Attack Squadron
Light Four
Naval Air Station
Norfolk, VA 23511

• The article is in the mail. It is entitled "How High the Moon—How Bright the Night." It was written by Garvin L. Holman, Ph.D. The article makes reference to TC 1-28, "Rotary Wing Night Flight." That TC has been superseded and now is included in FM 1-51, "Rotary Wing Flight."

Editor:

I have been an avid admirer and reader of ***Aviation Digest*** for several years. Over the years, ***Aviation Digest*** has proven to be an invaluable resource in a variety of aviation related assignments. In fact, I've come to rely on it. It seems, regardless of the topic, there is or has been a cogent address of the subject in your magazine. All I have to do to find "exactly" what I am looking for, is look . . . and look . . . and look for it; through every back issue I can lay my hands on, and therein lies the rub. I seldom "need" the *Gems* when they're freshest in my memory and easiest to identify and locate.

Being reasonably intelligent and basically lazy, I've "manufactured" all kinds of information retrieval systems, some of them actually work, "work being the operative word." Well, I found an even better one recently that's a "take off" from the Dewey Decimal System. I found it in a life insurance selling magazine. It's called the Million Dollar Round Table (MDRT) Retrieval System. It works like this; general and specific subjects have a standard numbering system. Every time the editor publishes an article or item in the magazine it is given an MDRT retrieval number. All a guy like myself has to do, is file a little card with the article title, date, issue, volume, etc., in the corresponding and appropriately numbered retrieval file. No more cut-up issues of ***Aviation Digest***, no photocopying, no hassle, just a simple, easily maintained, quick retrieval system (one index, one small file and one bookcase of ***Aviation Digest***).

I was just wondering, if you created a standardized numbering system for *Aviation Digest* and the articles contained therein, would all those *gems* that you publish have an "increased useful life expectancy"?

In the event you would like additional information on the retrieval system I based mine on, write to: Million Dollar Round Table, 2340 River Road, Des Plaines, IL 60018.

Jon F. Evans
Integrated Logistical
Support Office
TSARCOM
St. Louis, MO 63120

• We appreciate your kind remarks and the information about your retrieval/file system. The *Aviation Digest* has a subject matter automatic data processing readout which covers every article that has been printed in the magazine. These are available to readers upon request.

Editor:

I have been the threat officer for C Company 503 CAB for almost a year and I am having some difficulty finding new sources of information on OPFORs equipment and tactics. I read your article on threat training in ***Aviation Digest*** dated April 1981 and I have sent off letters to all the sources you mentioned in that article; but, there was one source that was not mentioned in your article that I was curious about. Is it possible to get reprints of previous threat articles that have been printed in the ***Aviation Digest***?

Thank you for your help.

WO1 Donald E. Jungell Jr.
C Co 503 CAB
APO New York 09165

Articles from the *Aviation Digest* requested in these letters have been mailed. Readers can obtain copies of material printed in any issue by writing to: Editor, *U.S. Army Aviation Digest*, P.O. Drawer P, Ft. Rucker, AL 36362

REPORTING FINAL

Late News From Army Aviation Activities

FROM MASSACHUSETTS

Best Engine. The General Electric T700 helicopter engine used in the UH-60 Black Hawk helicopter has been labeled one of the best engines ever built.

In ceremonies commemorating the Army's acceptance of the 500th T700 engine at GE's Lynn, MA plant, Colonel Ronald K. Andreson of the Army Development and Readiness Command said, "The T700 is one of the most successful, if not the most successful, engines developed for Army helicopter use and is a significant part of the Army Aviation program. The T700, in less than 100,000 hours of Black Hawk operation, established a level of maturity that traditionally has not been achieved by an engine until it reached the one million operating hour mark."

FROM FORT RUCKER

AH-64 OT II. "Operational Test (OT) is conducted to estimate a system's military utility, operational effectiveness and suitability; assess its compatibility/interoperability with other systems; measure its reliability, availability and maintainability; evaluate the Soldier-machine interface and logistic supportability aspects of the system; examine and determine the validity of operator and maintenance publications (along with tools, test equipment and spare parts); and to identify and recommend any needed modifications to the system." (DARCOM/TRADOC Pamphlet 70-2)

OT II of the AH-64 was conducted this summer at Ft. Hunter-Liggett, CA, and was designed to collect information in each of the above areas of interest. The 7th Infantry Division, specifically D Company of the 7th Aviation Battalion, was selected to be the test unit. (An important aspect of this and all OTs is the use of typical Army units to lend a good "green-suit" perspective to evaluation of the system.) For purposes of the OT, the 7th Aviation Battalion was equipped with both the AH-64 and the fully modernized AH-1S Cobra. Test trials were conducted with both aircraft to provide a basis for determining just how much the AH-64 will contribute to the overall effectiveness of the Army. A "slice" of a typical enemy unit was assembled and used as a realistic opposing force in simulated combat against the 7th.

The test began after a period of training for operator and maintenance personnel. Pre-test training was designed to approximate closely the training that will routinely be given to all AH-64 personnel, again to ensure that the test environment was representative of the "real world."

As is the case throughout the combat development process, the U.S. Army Training and Doctrine Command (TRADOC) represents Army forces that will ultimately use the AH-64 in training and, if necessary, in combat. The U.S. Army Materiel Development and Readiness Command (DARCOM) has been responsible for designing and building the system to specifications outlined in the requirement originally developed by TRADOC. It is TRADOC's responsibility to ensure that the final product provided by the DARCOM program manager meets the requirements of the user and can function effectively on the battlefield. The results of OT II will provide the core of TRADOC's evaluation of the AH-64.

The OT II was conducted by the Combat Development Experimentation Command (CDEC) under the direction of the Army's Operational Test and Evaluation Agency (OTEA). The final report of OT II results will be provided by CDEC; OTEA will conduct their independent evaluation of the test results. Together with the

photograph by SP4 Deb Ellis

First Cadet Solos. Cadet G. Scott McConnell (left) of the U.S. Military Academy, West Point, NY, receives a briefing from his instructor pilot, Edgar J. Bennett, at the U.S. Army Aviation Center, Ft. Rucker, AL. Cadet McConnell, one of 51 West Pointers who came to Ft. Rucker in July for a 3-week Army Aviation familiarization course, was the first in the group to solo in the TH-55 Osage helicopter. He is the son of Colonel and Mrs. Lewis J. McConnell. Colonel McConnell commands the Army Aviation Engineering Flight Activity at Edwards Air Force Base, CA.

results of all previous testing and a detailed Cost and Operational Effectiveness Analysis, the results of OT II will be presented to the Army System Acquisition Review Council (ASARC) in November.

The ASARC comprises membership of the Vice Chief of Staff of the Army, selected Department of the Army staff principals, and the Office of the Secretary of the Army. At its November meeting, the ASARC will scrutinize the total AH-64 system, from standpoints both of effectiveness and affordability, and will recommend to the Secretary of the Army whether or not to begin full-scale production of the aircraft. The results of OT II will be a critical part of the foundation for the ASARC decision, along with the other tests, evaluations and analyses that have been conducted. Whatever the outcome of the ASARC, its decision will be the product of years of effort and objective information gathering by TRADOC, DARCOM and the DA Staff.

(Major M. L. Brittingham, ATZQ-TSM-A)

New Commander. Lieutenant Colonel (P) William B. Woodson now commands the U.S. Army Aviation Development Test Activity (USAAVNDTA), succeeding Colonel William E. Crouch who retired in July. He came to his new assignment after graduating from the Industrial College of the Armed Forces, Washington, DC.

He has been in the Army for 21 years and has been an Army aviator since 1962.

(USAAVNC-PAO)

Graduation Speaker. Major General John J. Koehler Jr., commanding general, Army Test and Evaluation Command, Aberdeen Proving Ground, MD, addressed graduates of an 8-week Aviation Safety Officer Course.

He referred to last year's statistics which indicate that only 2.4 pilots died during the more than 100,000 hours flown—the best safety record that Army Aviation has achieved.

The general said that efficiency is the most critical of the various factors which safety stands for; and others he talked about were attitude, attention to detail, empathy and timeliness.

TAH-1S Fully Modernized (FM) Received. The first of an expected 23 training attack helicopters, TAH-1S, has been received from the Corpus Christi Army Depot in Texas. This fully modernized Cobra and the ones to follow are rebuilt AH-1G models.

Trainer modifications made to the AH-1S(FM) include the addition of hydraulic lines and valves and extension of the instructor pilot's collective control which equalizes the control input between the rear and front compartments. Also, a special switch in the front seat gives the instructor pilot complete control of the aircraft's armament.

(USAAVNC-PAO)

Army Aviation's Emporium. Dallas has its Neiman-Marcus; New York has its Saks Fifth Ave.; and Ft. Rucker has its Aviation Museum Gift Shop!

The Alabama shop has an advantage, however, over the Texas and New York stores for Army aviators, their families and friends, because purchases made there benefit the museum's building fund. Its profits go toward the money needed to construct a new home for the museum contents now valued at $70 million.

Another advantage of shopping at the museum emporium, which is operated by the Army Aviation Museum Foundation, Inc., is that its inventory is tailored to aviation tastes. There are items like helicopter mobiles, plaques and clocks, appropriately lettered tee shirts, caps, ties decorated with aviation motifs, and wargames.

REPORTING FINAL

Late News From Army Aviation Activities

A favorite with shoppers, according to Ed Brown, the foundation's director of development, is the jewelry selection. There are rings, bracelets, tie tacs, necklaces—many different gifts for men and women. One of the top-sellers is the aviation ring that closely resembles a school class ring. It has a life-time guarantee and is currently priced at only $35. This makes an ideal graduation gift for students when they finish the flight training course at Ft. Rucker.

Also popular are the aircraft models. Just as the museum has the free world's largest collection of helicopters so its gift shop has one of the best rotary and fixed wing model selections to be found anywhere. Included are models of the AH-1S Cobra, the CH-54 Skycrane, the Piper L4, the OH-6 Cayuse, and even some Russian helicopters.

These gift items, and many more, are located just inside the Army Aviation Museum's main entrance. The shop is a stopping place for most of the approximately 300,000 people who visit the museum each year, and they seem proud to know their purchases will help to erect an environmentally controlled building that will safely house Army Aviation's history.

If YOU want to contribute through this means and can't get to Ft. Rucker, send your shopping list to the Gift Shop Manager, P.O. Box H, Ft. Rucker, AL 36362. Or if YOU want to make a tax-deductable donation to the building fund, it can be sent to the Army Aviation Museum Foundation, Inc., at the same address.

World Helicopter Championships

THE WORLD'S BEST

World Champion Helicopter Pilot: CW2 George D. Chrest, Fort Hood, TX

The United States won the team and individual championships in the fourth World Helicopter Championships held near Warsaw, Poland, in August.

Sponsored by the Helicopter Club of America, the U.S. team consisted of four Army crews (see the April 1981 *Aviation Digest* for names) and one civilian crew. The Americans scored 2,253, edging out the Federal Republic of Germany team at 2,251. Other countries competing were Poland, 2,233 points; USSR, 2,115; and Great Britain, 2,040.

The world's best helicopter pilot is Chief Warrant Officer, CW2, George D. Chrest of Ft. Hood, TX. He won the world individual championship with 761 points, followed by a West German pilot with 747 points. CW2 Chrest's copilot was Captain Stephen G. Kee, also of Ft. Hood.

Competition included four mandatory events testing pilot skill in arrival and rescue maneuvers, precision flying, navigation and helicopter slalom.

In a message to Army members of the 1981 World Helicopter Championship Team, General E. C. Meyer, Army Chief of Staff, said: "You have attained navigation and precision flying skills deemed by an international board of judges as number one in the world. This competition has shown the world the high state of training and combat readiness of the United States of America. You have displayed vertical flight and pilot skills which are unequalled.... Now, I challenge each of you to provide your... flying skills to your combat units, for that is the ultimate challenge for a world champion."

"Training Feedback": You are the Source

IN APRIL 1979 and February 1980, the "DES Report to the Field" presented descriptions and overviews of the mission and function of the Evaluation Division of DES. A summary of the message of the two articles is presented in the paragraph below.

The division is responsible for gathering feedback about training processes and products. The feedback is analyzed with the mission of ensuring that the various training goals are adequate and being achieved. The methods used to accomplish this mission are carried out in accordance with the guidelines established in TRADOC (Training and Doctrine Command) Pamphlet 350-30, Interservice Procedures for Instructional Systems Development. The division is organized into the Technical Support Branch, the Instructional Systems Evaluation Branch, and the Instructional Systems Research Branch. The associated functions of these branches are to provide statistical and analytical expertise, to establish internal/institutional effectiveness of training feedback, and to establish external (field) graduate-quality feedback.

The Evaluation Division's mission of training control constitutes the final phase of the five phase instructional systems development process. A full description of the instructional development procedure is unnecessary. However, an understanding of the importance and impact of the initial function of course development is essential to comprehending the importance of feedback from you in the field.

The first step in developing a course involves job/task analysis. This step identifies all of the tasks that comprise a specific job. The particular job's "critical" tasks are identified from the comprehensive task listing. Due to resource limitations, not all of these tasks can be trained at the U.S. Army Aviation Center, Ft. Rucker, AL. Someone has to determine how many of these critical training tasks are suited for institutional based training. Then someone has to establish the number of tasks that can be supported by available training resources. It is apparent that the quality of training is totally dependent on the quality and comprehensiveness of the job/task analysis. The people making these decisions may not have all the information they need to assemble the package of tasks which will be most useful to you in the field. If you do not provide feedback, then the school may develop a case of "tunnel vision." This causes the information at the Aviation Center to indicate excellent training results, while graduate field performance may be less than desirable. The internal evaluator must assume that the critical tasks selected for training adequately satisfy job requirements in the field. Therefore, internal evaluations are primarily limited to determining how well students are learning the tasks that are being taught. The tasks trained usually will not be changed without evidence from the field that the tasks *are not* preparing the student to do the job.

This is why feedback from the field is vital to developing a quality, useful training product. Only personnel in the field can provide feedback for assessing the suitability of critical tasks selected for training. Again, reliance on institutional information sources may generate problems between training efforts and field needs. This situation is sometimes referred to as the "school syndrome."

Everyone at the Aviation Center recognizes the importance of timely feedback from the field. The Instructional Systems Research Branch has established programs for gathering field feedback. These programs, the Graduate Questionnaire Program and the Aviation Center Training Analysis and Assistance Team

DES welcomes your inquiries and requests to focus attention on an area of major importance. Write to us at: Commander, U.S. Army Aviation Center, ATTN: ATZQ-ES, Ft. Rucker, AL 36362; or call us at AUTOVON 558-3504 or commercial 205-255-3504. After duty hours call Ft. Rucker Hot Line, AUTOVON 558-6487 or 205-255-6487 and leave a message

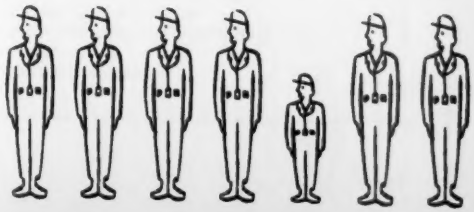
REPORT TO THE FIELD

(ACTAAT), are described in the February 1980 issue of the ***Aviation Digest***. These programs are producing useful feedback that has caused improvements to be made in the training process. However, the familiar problem of insufficient resources limits the volume and detail of feedback on problems commonly known in the field environment. That is the reason the ***Aviation Digest*** DES logo contains our address and AUTOVON number. Your observations are extremely important to the improvement of our training products. We have not been hearing from you. Are we that good or are you that complacent?

While opinions, by themselves, do not cause change, a consensus from Armywide locations does create a reason for allocating resources for research and documentation of specific problems. When specific problems have been identified and researched, defendable reasons can be established to support recommendations for positive change. Lack of defendable documentation to support a recommended change causes inaction due to the absence of accurate information. The lack of timely problem resolution can result in a course graduate effectively trained in tasks that are of little value in performing the job in the field.

The next time your group or organization is conducting a "professional development seminar" and "training shortcomings" is the subject, write us a note or pick up the telephone and let us hear about it. If you do not take the time to make the effort, then "common sense" problems are likely to remain "common sense" problems.

We're interested in your opinion about how training and training management can be improved to help you do your job. Write your comments on the next page, detach the page, fold and mail it to us.



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Rationalization Standardization Interoperability

Rush Wicker
Directorate of Combat Developments
U.S. Army Aviation Center
Fort Rucker, AL

IN TODAY'S MODERN Army, RSI—rationalization, standardization and interoperability—has become a popular subject. Almost every project, no matter whether it be research and development or the employment of forces, seems to have some RSI impact. Unfortunately, many do not understand the implications of RSI. Part of this confusion can be found in the multitude of interpretations given to the term RSI.

Before addressing what is required to comply with RSI regulations, an understandable definition of RSI should be agreed upon. The regulation that governs RSI is AR 34-1. It describes rationalization as: *"Any action that increases the effectiveness of alliance forces through more efficient or effective use of defense resources committed to the alliance. Rationalization includes consolidation, reassignments of national priorities to higher alliance needs, standardization, specialization, mutual support, improved interoperability or greater cooperation. Rationalization applies to both weapons/materiel resources and nonweapons military matters."*

Rationalization is the most difficult and overlooked part of the RSI program. Normally, those working on RSI matters give the "R" lip service, turning quickly to hardware development or to services or supply matters. To the Army, rationalization produces the operational concepts; concepts which become the basis for joint development of tactics, hardware, services, procedures, organizations or training systems. If concepts are not well thought out, then any attempt to achieve commonality is sure to fail.

The "S," standardization, is defined as: *"The process by which nations achieve the closest practicable cooperation among forces, the most efficient use of research, development and production resources, and agree to adopt, in the broadest possible basis, use of:*

- *Common or compatible operational, administrative and logistics procedures*
- *Common or compatible technical procedures and criteria*
- *Common, compatible or interchangeable supplies, components, weapons or equipment*
- *Common or compatible tactical doctrine with corresponding organizational compatibility."*

The major element of standardization is the process of developing, producing, acquiring and using the same or common weapons or hardware and software and procedures related thereto. This seems simple and straightforward. Unfortunately, there are hidden obstacles to prevent full standardization. National pride, economics, cultural differences, unemployment, industrial bases, national politics and national laws all complicate this issue. When, considering these realities, it would appear that only the Soviet approach of mandatory standardi-

GLOSSARY

ASCC	Air Standardization Coordinating Committee
ATP	Allied Tactical Publications
HISWP	NATO Helicopter Interservice Working Party
NATO	North Atlantic Treaty Organization
QSTAG	Quadripartite Standardization Agreements
QWG/AVN	Quadripartite Working Group/Aviation
RSI	rationalization, standardization and interoperability
STANAG	standardization agreements
TRADOC	Training and Doctrine Command
WP	working party

Rationalization
Standardization
Interoperability

zation will work; however, among the free and democratic nations, where total standardization may not be likely, these obstacles must not be allowed to delay the achievement of an interoperable force among nations.

Interoperability is defined as: *"The ability of systems, units, or forces to provide service to and accept service from other systems, units, or forces and to use the services so exchanged to enable them to operate effectively together."*

Interoperability, by definition, deals with services that can be provided or accepted by member nations. In the opinion of many, interoperability is the most promising part of RSI, for often it can be obtained at little or no cost. For example, the common use of the 105 millimeter tank gun by many NATO forces allows common ammunition servicing. One of the goals of an interoperable force is to achieve operational interoperability; the ability to use the firepower and the maneuver forces of each nation just as one would use those of one's own forces.

There are several organizations through which the United States develops agreements among nations. Within each alliance there are numerous working parties responsible for a particular area of concern. Army Aviation related agreements are addressed in several WPs. The U.S. Army Aviation center at Ft. Rucker, AL, provides representation to the NATO Helicopter Interserivce Working Party (HISWP), the Quadripartite Working Group/Aviation (QWG/AVN), and the Air Standardization Coordinating Committee WP-44. Within the HISWP, standardization agreements, commonly referred to as STANAG, are developed. Most of the STANAGs relate to helicopter operations and procedures.

Member nations of NATO (North Atlantic Treaty Organization) have agreed to incorporate STANAG agreements into this nation's training material and doctrinal publications. Another document that the NATO forums produce is Allied Tactical Publications. These publications differ from STANAG's in that they contain much more detailed information. The ATP can be compared to the U.S. Army Field Manual. It is distributed directly to field units and schools for implementation into field exercises and programs of instruction.

The QWG/AVN, which includes representation from America, Britain, Canada and Australia, is responsible for the development of Quadripartite Standardization Agreements (QSTAGs) and concept papers. These publications address equipment needs and tactical doctrine.

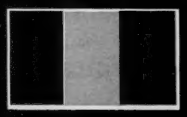
ASCC WP-44, which includes representation from America, Britain, Canada, Australia and New Zealand, is primarily Air Force oriented. It does, however, address helicopter operations. The method used by this working party to achieve standardization is through agreements referred to as "air standards." Many of the approved STANAGs have been adopted as air standards by WP-44.

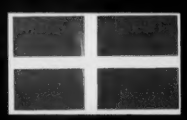
In addition to the development of standardization agreements by each of the forums, a continuous effort is made by the nations to share in the development of new equipment. Invitations to comment on materiel requirement documents are circulated to the nations for comment. Nations having an interest may request an equipment loan to determine its adaptability for their forces. Experience has shown that the sharing of materiel requirements, documents and items of equipment during the early development has improved the standardization/interoperability of equipment between nations.

Although not an easy task to develop and ratify a standardization agreement, about 37 agreements have been ratified and 22 drafts are being considered for ratification within the three forums. This commitment by the U.S. Army necessitates that each of the TRADOC Centers abide by the terms of the agreement and incorporate the information into related publications. This action will help ensure that academic instructors are teaching agreed upon doctrine and tactical units are employing this doctrine. Additionally, it will enable allied nations to operate as a unified force when conducting joint operations.

In view of this relative importance of RSI, the ***Aviation Digest*** periodically will carry an RSI report. The first begins on the next page.

RSI Report

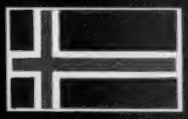




Most of the readers of the *Aviation Digest* realize the RSI program exists, but are you aware of the many actions that are required to keep the program in step with the needs of the participating nations? During the second quarter of fiscal year 1981, the U.S. Army Aviation Center RSI officer attended the 5th meeting of the Helicopter Interservice Working Party at which 10 NATO nations were represented. A summary of the most important actions is as follows:

1. Draft STANAG 2951 (Emergency Nonelectric Communication Cards for Aviation Operations) was accepted by the delegates. This is the U.S. Send-A-Message (SAM) system. It will be forwarded to the nations for ratification.
2. Draft STANAG 2355 (Procedures for the Employment of Helicopters in the Antiarmor Roles) was reviewed and minor changes were made. The agreement will be forwarded to the nations for ratification.
3. The delegates agreed to the U.S. proposal to incorporate the inverted Y tactical landing light system into STANAG 3597 (Tactical or Nonpermanent Landing Sites for Helicopters). The change to the agreement will be forwarded to the nations for ratification.
4. The delegates agreed that draft STANAG 2944 (Helicopter Cross-Servicing Requirements for Land Operations) should be transferred to the Cross-Servicing Working Party. The HISWP will follow the progress of this STANAG. If ratification becomes delayed or if unacceptable changes are made, the HISWP will take action to develop the agreement in the HISWP.
5. A draft outline for an Allied Training Publication entitled "Helicopter Operations" was accepted by HISWP. This ATP will incorporate the information contained in all the related Army Aviation STANAGs into a single volume. The purpose of this action is to provide the Soldier a single source document that relates to helicopter operations. The draft outline is being circulated for national comments.
6. Under the agenda item for new agreements, the United States proposed to draft a new STANAG on Aircraft Battlefield Countermeasures and Survivability. The German delegation submitted a proposal to develop a new STANAG on Instrument Flight in the Battlefield Area.

Those familiar with the RSI program recognize that the nations are a long way from achieving the desired degree of interoperability in doctrine and equipment. It is only through the effort and cooperation of all that this goal can be achieved. Your ideas and suggestions are solicited. If this article has generated any questions or requirements, write Mr. Rush Wicker at: Commander, U.S. Army Aviation Center, ATTN: ATZQ-D-CC, Ft. Rucker, AL 36362, or phone AUTOVON: 558-3489, Commercial: 205-255-3489.



PEARL'S

Personal Equipment And Rescue/survival Lowdown

Pam McLemore photo by Tom Greene

ALSE Activities

A new ALSE activity is being established in D Company of the 4th Aviation Battalion, 4th Infantry Division, Ft. Carson, CO. CPT Robert W. McAllister, executive officer of the 4th Aviation Battalion, is spearheading this organizational effort. CW3 Scott C. Nichols of D Company will be the ALSE officer in charge. This new activity will provide centralized inspection, maintenance and repair for all ALSE within the 4th Aviation Battalion.

Establishment of ALSE activities such as these is noteworthy. Let us know what you are doing out there and we'll be more than happy to spread the word via PEARL.

Nonhardening Ear Seal For SPH-4

The nonhardening ear seal for the SPH-4 helmet is becoming available to the field, and we have received numerous requests for the correct stock number for this item. Such a seal (without the tab on the side) can be ordered from B16 under NSN 5965-00-058-1246 at a cost of $1.88 each. (Thanks to SFC Gerald Johnson, USAARL, Ft. Rucker, AL, for this info.)

Inflatable Body And Head Restraint System

A Letter of Agreement (LOA) for the Inflatable Body and Head Restraint System (IBAHRS) has been approved by TRADOC and DARCOM and the subject requirements document has been forwarded to major Army commands, other services and DOD agencies for harmonization. This action has been prompted by the Army and Navy need for an improved pilot/copilot restraint system that would protect aviators in potentially survivable aircraft accidents. The IBAHRS, when fielded, would provide this capability by applying the crash impact protection of the automotive airbag concept to the conventional aircrew restraint system.

Erroneous RODS

The Defense Personnel Support Center (DPSC) has reported that some Army units are submitting Reports of Discrepancy (RODs) disclosing that SPH-4 flyer's helmets, NSNs 8415-00-144-4981 and -4985, have been shipped to DLA depots for maintenance, repair, cleaning and painting. In almost all instances of this type, DPSC directed the depot to dispose of the helmets in accordance with current procedures. DLA depots do *not* have the mission of repairing and servicing the SPH-4 flyer's helmet.

TM 10-8415-206-13 contains instructions for inspection, maintenance, troubleshooting, painting and marking at various maintenance levels. Army units should perform required maintenance and repair at levels authorized. If uneconomically repairable, the helmets should be disposed of at the organizational level.

Do *not* submit RODs to DPSC or ship SPH-4 flyer's helmets to DLA depots for maintenance and/or repair. For further information, contact Geraldine Lyles, U.S. Army Support Activity, Philadelphia, at AUTOVON 444-2537.

Spare Parts For MK-896A Headset-Microphone

The following parts for the MK-896A Headset-Microphone are now available for requisitioning in accordance with TM 11-5965-279-13&P, published 15 Feb. 81.

Source of Supply (RIC)	Nomenclature	NSN
S9E	Kit, Cord Assembly	5965-00-177-2897
N32	Swivel Assembly	8475-00-117-4538
S9I	Screw, Machine	5305-00-616-8543
S9I	Washer, Lock	5310-00-579-5554
S9E	Plate, Jack Holder	5340-01-007-8366
B16	Microphone, Dynamic CC7A/AIC	5965-01-094-6574
S9E	Earphone H-143A/AIC	5965-01-094-6602
B16	Boom Assembly	5965-01-094-6573
B16	Cable Assembly, Microphone	5965-01-094-6572
S9I	Grommet, Earcup	5325-01-096-1189
S9I	Grommet, Helmet	5325-01-096-1190

For further information, contact Mr. B. Bluford, U.S. Army Communications and Electronics Command, AUTOVON 992-3812.

ALSE Supporter

Again I am writing to help support the ALSE program. This particular time I am writing in reference to the "Army Suggestion Award" program. Maybe we can help ourselves in the long run by selling this program.

Every individual in the ALSE field who has to work with this equipment occasionally has ideas about how to improve the system. If they would write down the idea and submit it as an Army suggestion, they would improve the system as well as make money for themselves.

The suggestion program as well as DA Forms 2028 and QDRs can go a long way to improve ALSE. I can say this for sure because I have won two suggestion awards so far.

One suggestion was to reduce the third level of maintenance on SPH-4 flight helmets. This suggestion put $120 in my pocket and the manual for the helmet is being rewritten from an 800-13 (first thru third level of maintenance) to an 800-12&P (first and second with parts and special tools).

The other suggestion was to change the time life (shelf and service) for the components of the C-12 survival kits. A large majority of the ALSE had a relatively short life; i.e., the strobe light battery had a 1-year life versus the indication in the Army TM that it had a 36-month life. This suggestion grossed $520.

Even though the suggestion reply and verification procedure take an inordinate amount of time, it serves two functions; one is to help save money and streamline Army procedures; the other function is to put money (compensation) in the originator's pocket. Retain good documentation, supply saving figures and provide an address for the suggestion's destination (both locally and higher). Read the suggestion AR and write, write, write. Good luck with your suggestions. (CW3 Dave Klindt, U.S. Army Safety and Standardization Board, USAREUR)

Questions And Answers

Reference your PEARL article in the April 1981 edition of Aviation Digest entitled "Nylon Flight Equipment." If nylon bands around the wrist are so bad, how bad is it for the Army aviator to wear a nylon SRU-21/P vest around the upper torso? True, normally there is no flesh-nylon contact, but this could also be true about the watchband if worn over the gloves.

Also, when you furnish information on items of equipment and repair parts, could you include the publication data when you give a national stock number, source of supply and cost data? (CW3 Rex L. Bowen, AASF, OKARNG, Tulsa, OK)

You are absolutely correct about the SRU-21/P vest and nylon watchbands. As long as there is no flesh-nylon contact, then there is no problem. However, since many aviators would tend to overlook this important factor, especially in the case of something like a watchband, we feel it is to everyone's advantage to discourage the wear of extraneous nylon items. In the case of the vest, it is made of nylon simply for strength and durability; acceptance of the SRU-21/P for use by the Army is predicated on the fact that it will never come in direct contact with the aviator's skin.

As far as publication data is concerned, we will henceforth endeavor to supply this information whenever practicable. You must remember, however, that many of the items we tell you about belong to the other services or have not yet been adopted by the Army; or they may be so new as to not yet be listed in any Army publication. Consequently, we may not always be able to give that desired publication data.

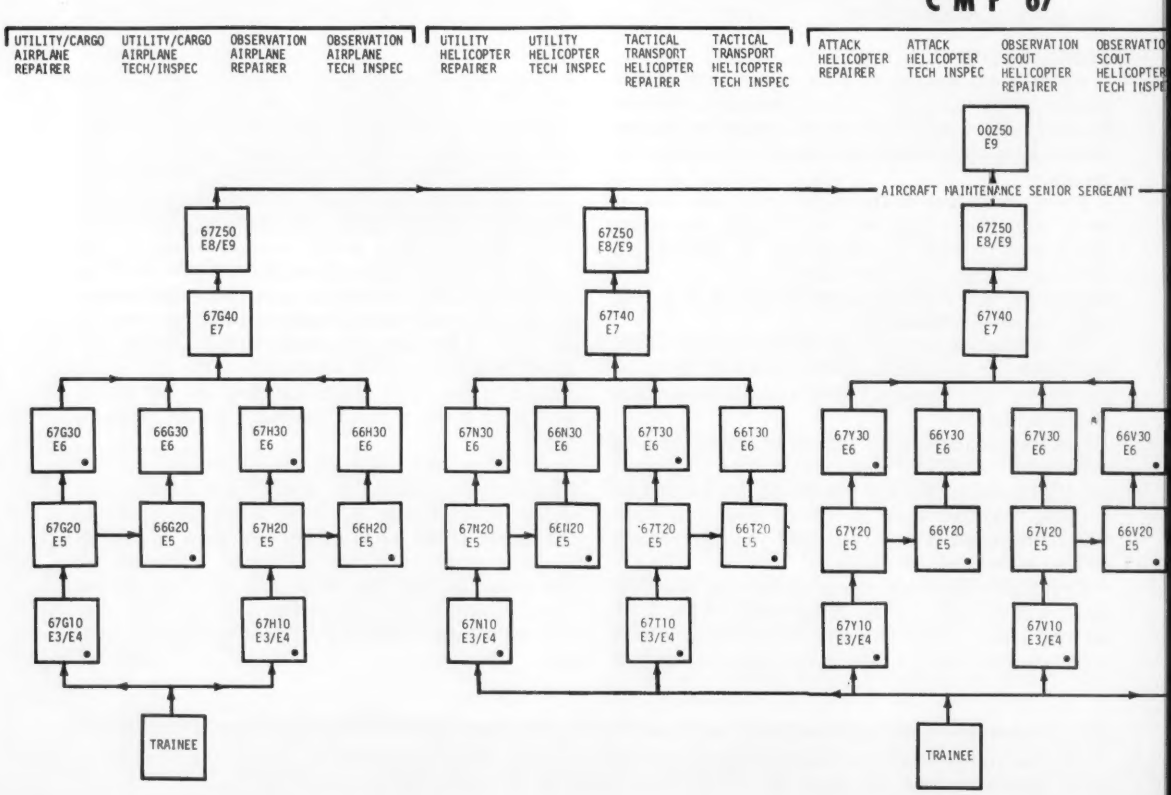
If you have a question about personal equipment or rescue/survival gear, write PEARL, DARCOM, ATTN: DRCPO-ALSE, 4300 Goodfellow Blvd., St. Louis, MO 63120 or call AUTOVON 693-3307 or Commercial 314-263-3307

Aviation Maintenance

Captain Charles N. Avery
Organization and Force Development Division
Directorate of Combat Developments
U.S. Army Transportation School
Fort Eustis, VA

HAVE YOU EVER experienced the thrill, and sometimes terror, of cresting a hill at 90 plus knots of airspeed? As you descend down to the valley floor, trees seem to pass you by like a mat of green grass. Once relatively safe in the bottom of the valley you navigate your way to the predetermined landing zone, in this case a small ("it looked bigger on the map") opening in the trees.

"Will the pathfinders be there? The winds seem to be a little strong. It wasn't supposed to be 110 degrees on the valley floor. "Watch out for that wire Andy; where the heck did it come from; it's not on the map." As you maneuver for the approach these and many other points roll through your mind. You, your



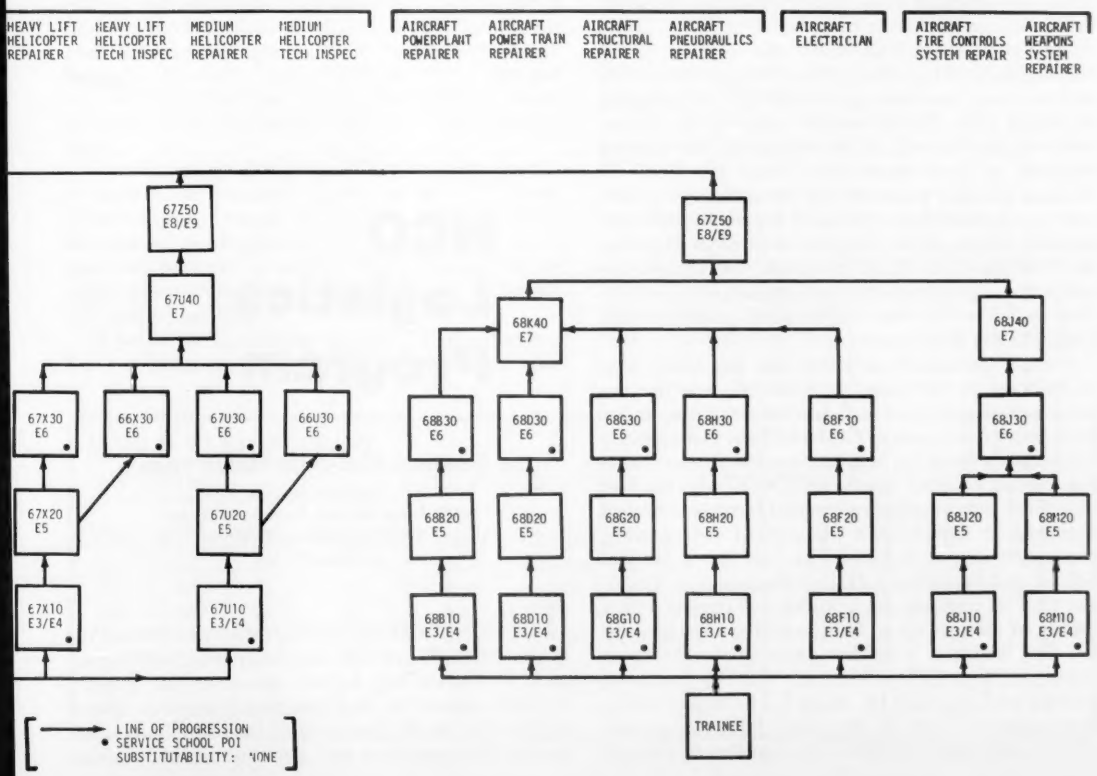
crew and your machine must be as one in order for the mission to be a success. Have you ever thought what it takes to make sure that the crew and machine can meet the challenge?

Two challenge-meeting requirements are well trained pilots and technically sophisticated equipment. Those elements are written about so much that they are accepted as completely necessary. Another element that has to be present for a successful mission, and one that is not so well publicized, is the expert enlisted mechanic/crewchief. Fulfillment of that need is being met by the Career Management Field (CMF) 67 Study.

To give you a little background, allow me to return for a moment to the middle 1970s. With the Vietnam conflict ended and a return to a peacetime environment we should have seen an increase in the effectiveness of aviation maintenance. Actually, just the opposite was true. Operationally ready rates began to decline and many "yardsticks" of organizational effectiveness exhibited symptoms of significant problems.

In an effort to find out why and where our maintenance program was failing, the Department of the Army CMF 67 study group was commissioned in January 1979 and tasked with looking into all aspects of aviation maintenance and with making recommendations on ways of improving the effectiveness of Army Aviation maintenance. The group's efforts were charted by a steering committee chaired by Mr. Joseph Cribbins, Special Assistant for Aviation to the Deputy Chief of Staff, Logistics.

The study determined that many reasons existed for the decline of maintenance effectiveness; however, a common denominator to all the problems was the failure of planners to fully recognize the interrelationships and interdependence between the training, personnel management, force structure systems and unit mission. This has resulted in force structure grade and skill requirements which cannot be met; an initial training program which fails to provide



graduates with the skills required of the duty positions they must fill; and a CMF/MOS (military occupational specialty) structure which does not provide an effective means of training, managing and using personnel.

Recommendations of the study, accepted by the Vice Chief of Staff of the Army, have recognized this interrelationship and interdependence and have exhaustively sought to address all three areas in the proposed solution. At the training base, advanced individual training students will no longer be trained as assistant repairers but rather as "doers" (watch for a forthcoming article on 67U "DOER" Maintenance Training Course by Major Boyd E. King of the U.S. Army Transportation School). They will arrive at their first units as trained mechanics ready to function in support of the units' missions rather than as a drain on the commanders' already over-burdened training schedule and mission commitments.

The present CMF 67 force structure does not provide a sustaining framework for the field. In all 17 MOSs that now make up the field, we see a disproportionate bulge at the grade of E5. This bulge results in quicker than normal promotion to E5 but unacceptably longer or limited promotion potential to E6. This results in an exodus of technically proficient Soldiers from the Army or to other MOSs to attain normal promotion. This bulge also serves to invite the migration of supervisory level Soldiers from other military occupational specialties into this highly technical field. These people come to the career field without benefit of the experience or training required to be a supervisor. Under the CMF 67 revision, the duty positions and the authorized grades will lend themselves to a mutually supportive structure insuring normal career progression through all grades in all MOSs within the CMF. It also will control the influx of people from other specialties; and we will be able to "grow our own" supervisors, complete with the technical skills required.

Present personnel structure for the CMF also contributes to the gaps in technical expertise we have experienced in the field. For example, under the present system any 67Z40 can fill any maintenance supervisor's position without regard for previous experience. In other words, a 67Z40 E7 who has had only fixed wing experience can find himself or herself assigned to supervise a platoon of rotary wing mechanics and crewchiefs. This puts the individual Soldier and the unit at a distinct disadvantage. Under the CMF 67 revision, each Soldier will remain with a family of aircraft up to and including the grade of E7. For instance, a Soldier entering the Army as either a 67N or 67T will remain with this family of aircraft until reaching E8. As an E7, he or she will be designated a 67T40. At the grade of E8, that person will be designated a 67Z50. The families of aircraft and the related MOSs are 67G, consisting of 67G and H, 67T consisting of 67N and T, 67Y consisting of 67Y and V, and 67U consisting of 67X and U (figure 1, pages 32 and 33). This structure will provide technically proficient supervisors through the grade of E7 to oversee and supervise the maintenance effort.

In addition, the revised CMF 67 establishes separate technical inspector MOSs by type aircraft. These new 66 series will be school trained in quality assurance and aircraft and component inspection. Increasing the inspector's level of technical knowledge will result in a better quality assurance program capable of supporting materiel readiness.

Many other aspects of the career field are being evaluated as part of the CMF 67 revision. These include reenlistments, migration, and monetary and nonmonetary incentives. Many of the results of this revision will be visible within the Army Aviation community during the coming months, and the Vice Chief of Staff has stated that all provisions of the restructure will be completed by October 1983.

At no time in our history has such a need existed for a strong, mission-capable and mission-ready Army. This fact is equally true for Army Aviation since it is a part of the combined arms team. We believe the revision of CMF 67 will greatly enhance our aviation capability to meet the challenge of the 1980s and beyond.

NCO Logistics Program

Sergeant First Class Robert Vega
Logistics Branch
U.S. Army Military Personnel Center
2461 Eisenhower Avenue
Alexandria, VA

THE NONCOMMISSIONED Officer Logistics Program (NCOLP) provides the Army with highly qualified NCOs for key logistic positions that require Soldiers trained in multifunctional logistics. These logistic NCOs are knowledgeable in supply, maintenance, transportation and ammunition, and provide

a vital link to training and supervision of logistic operations. The NCOLP is a total Army program which includes both active and Reserve Component Soldiers for use during mobilization expansion of the Army Logistics System. The Army recently completed a worldwide review of 26,000 active Army positions to identify and validate NCOLP requirements. Currently there are 2,185 positions identified and coded with special qualification identifier (SQI) "K." These positions are primarily at grades E7 through E9.

Soldiers from 27 Military Occupational Specialties (MOSs) in grades E6 through E9 are eligible for the program. The chart below shows authorizations, operating strength and percent fill by each NCOLP MOS. MOS 32Z (C-E Maintenance Chief), 33S (Electronic Warfare/Intercept System Repairer), 35P (Avionic Equipment Maintenance Supervisor), 55G (Nuclear Weapons Maintenance Specialist), 63H (Track Vehicle Repairer), 64Z (Transportation Senior Sergeant), 71N (Traffic Management Coordinator) and 76X (Subsistence Supply Specialist) are particularly short. Note that 55X (Ammunition Inspector), 63B (Light Wheel Vehicle/Power Generation Mechanic), 63D (Self-Propelled Field Artillery Mechanic), 63E (XM1 Tank System Mechanic), 63N (M60A1 Tank System Mechanic), 63R (M60A2 Tank System Mechanic), 63T (Improved TOW Vehicle/Infantry Fighting Vehicle/Cavalry Fighting Vehicle System Mechanic), 76P (Materiel Control and Accounting Specialist) and 76Y (Unit Supply Specialist) are currently filled.

Soldiers accepted into the NCOLP are programed to attend the resident course at the U.S. Army Quartermaster School, Ft. Lee, VA. There students are trained in all aspects of the logistics system so they can perform as logistic NCOs responsible for supervision, training and operation in a multitude of logistic functions.

If you want to become an NCOLP member and have a program MOS that is short, submit your application to U.S. Army Military Personnel Center (MILPERCEN), 2461 Eisenhower Ave., Alexandria, VA 22331, ATTN: DAPC-EPM-L. Chapter 7, AR 614-200, provides prerequisites for entry into the program. Department of the Army (DA) Pamphlet 600-8, Procedure 3-35, provides instructions for submitting NCOLP applications. Your application will be expeditiously processed. If selected, you will:

- Receive a certificate of membership signed by the DA DCSLOG (Office of the Deputy Chief of Staff for Logistics).
- Attend the 7-week and 1-day NCOLP course at Ft. Lee.
- Receive the special qualification identifier "K."

NCOLP members are experiencing a high promotion selection rate by DA selection boards. Additionally, the program offers professional recognition, career development and the opportunity to serve in key logistics assignments.

The overall program fill is currently at 89 percent. The DA ODCSLOG and MILPERCEN objective is to fill the program to 110 percent of authorizations to cover new accessions awaiting schooling and transients; e.g., members in school, temporary duty, travel status and the continental United States rotation base.

Entry into the NCOLP is voluntary. Acceptance standards are high and are designed to exclude all but those who have consistently demonstrated outstanding qualifications.

The NCOLP is a means whereby the Army can meet its continuing demand for placing highly qualified NCOs in the key logistic positions. The program further provides an optimum opportunity to meet readiness goals and NCO job satisfaction.

NCOs in shortage NCOLP MOSs are encouraged to apply for membership. The MILPERCEN point of contact, and NCOLP member, is Sergeant First Class Robert Vega, DAPC-EPM-L, AUTOVON 221-8007/8008. Please contact him for any assistance.

NCOLP STATUS, E6-E9

AS OF 19 JUN 1981
SOURCE: USAMILPERCEN, DAPC-EPM-L

MOS	AUTH	OPER	PERCENT
32Z	113	42	37
33S	26	4	15
35P	32	14	44
45Z	31	22	71
55B	30	24	80
55G	23	6	26
55X	CURRENTLY FILLED		
55Z	35	32	91
62B	43	43	100
63B	CURRENTLY FILLED		
63D	CURRENTLY FILLED		
63E	CURRENTLY FILLED		
63H	152	64	42
63N	CURRENTLY FILLED		
63R	CURRENTLY FILLED		
63T	CURRENTLY FILLED		
63Z	165	103	62
64Z	54	32	59
67Z	84	66	79
71N	63	34	54
76J	39	34	87
76P	CURRENTLY FILLED		
76V	67	54	81
76W	56	38	68
76X	28	7	25
76Y	CURRENTLY FILLED		
76Z	653	452	69

"Hangar Talk" is a quiz containing questions based on publications applicable to Army Aviation. The answers are at the bottom of the page. If you did not do well, perhaps you should get out the publication and look it over.

TC 1-62
AVIATION LIFE SUPPORT EQUIPMENT (ALSE)

CW2 Gary R. Weiland
Directorate of Training Developments
U.S. Army Aviation Center
Fort Rucker, AL

1. Aviation commanders are required to appoint an aviation life support equipment (ALSE) officer and an ALSE noncommissioned officer to be responsible for ALSE program guidelines and equipment usage and maintenance.

A. True
B. False

2. If locally funded, Army ALSE *officers* and *enlisted personnel* can attend U.S. Air Force and Navy ALSE courses.

A. True
B. False

3. What is the ground-to-air range (nautical miles (NM)) of the AN/PRC-90 survival radio?

A. 15 NM voice mode, 25 NM beacon mode
B. 25 NM voice mode, 40 NM beacon mode
C. 60 NM voice mode, 80 NM beacon mode

4. Army aircraft are not capable of homing to a downed aircrew transmitting with the AN/PRC-90 survival radio.

A. True
B. False

5. What is the allocation of the general-purpose first aid kit which is used in all Army aircraft?

A. One per each five occupants or fraction thereof.
B. One per crew compartment and one per three passengers or fraction thereof.
C. One per crew compartment and one per five passenger seats/capacity or fraction thereof.

6. Aircrewmember body armor is designed to provide passenger seats/capacity or fraction thereof.

A. 7.62 mm (.30 caliber) threat rifle/machinegun
B. 12.7 mm (.51 caliber) threat machinegun
C. 14.5 mm (.58 caliber) threat machinegun

7. Which item of survival equipment is not a standard component of the SRU-21/P survival vest and, if desired, must be locally added?

A. Magnetic compass
B. Combat casualty blanket
C. Survival panel marker

8. Life rafts are a standard component of individual overwater survival kits.

A. True
B. False

9. Aircrew body armor plates should be removed from their carriers for storage.

A. True
B. False

10. The first aid kit in the individual cold climate survival kit contains *hot climate* antichap-lipstick.

A. True
B. False

ANSWERS
TC 1-62

1. A (page 2)
2. A (page 2)
3. C (page 24)
4. A (page 23)
5. C (page 45)
6. A (page 52)
7. C (page 81)
8. A (page 83)
9. B (page 56)
10. A (page 85)

THREAT

Major Frank E. Babiasz
Threat Branch
Directorate of Combat Developments
U.S. Army Aviation Center
Fort Rucker, AL

Flight School EAST

REGULAR SOVIET military pilots and navigators are educated in fifteen 4-year institutions known as higher aviation schools, two of which are dedicated to train helicopter pilots. Selection for the schools is very competitive, and political reliability, as well as academic achievement, is a major prerequisite.

Normally, each school admits 200 cadets per year. Annually, they receive about 950 classroom hours and 300 hours of drills. They listen to lectures, write research papers, and participate in work groups that cover scientific, military and technical subjects. The curriculum is very extensive. Some of the subjects are physics, analytical geometry, theoretical mechanics, bomb and rocket ballistics, and principles of scientific communism.

Schools that specialize in training helicopter pilots are primarily equipped with Mi-2 HOPLITE and Mi-8 HIP helicopters. During their school, each cadet accumulates approximately 360 flight hours. The dropout rate is about 30 percent, attesting to the rigorous training environment. Although some are dismissed for medical or disciplinary reasons, most are eliminated for their inability to master flying techniques. It is interesting to note that a significant portion of their academic training is devoted to ideological development. As future officers, they must be dedicated to Marxist-Leninist ideals and develop unquestioned obedience to the military and political officers appointed over them.

After graduation, the pilots are assigned to operational units. They are not yet considered combat ready and while in the unit continue an extensive training program. Only when the young pilots have mastered the necessary skills will they be considered fully qualified as combat pilots of Soviet Frontal Aviation.

In summation, Soviet military pilots have continually strived to equal the skills of their Western counterparts. The Soviets feel that equality, and even superiority, is an attainable goal in the near future. The training received in their 4-year schools provides a sound basis for the possible achievement of that goal.

NAME OF SCHOOL	LOCATION	AIRCRAFT/ INSTRUCTORS	PILOTS GRADUATED ANNUALLY
Saratov Higher Military Aviation Pilots School	Saratov, Volga Military District	120-140 Mi-2 & Mi-8 About 130 Instructors	About 150
Syzran Higher Military Aviation Pilots School	Syzran, Kuybyshev Region, Volga Military District	120-140 Mi-1 Mi-2 & Mi-8 About 130 Instructors	About 150

SOURCE: Defense Intelligence Report "Training Soviet Military Flight Personnel," November 1979.

Specialist Four Rick Bretz
Public Affairs Office
XVIII Airborne Corps
Fort Bragg, NC

MAST MISSION

"I CAN'T FEEL my right side," the 33-year-old accident victim said to the medic. He was almost in shock but could hear the faint music of blades slicing overhead. Looking around he could see the inside of a helicopter and beneath him he could feel a backboard.

The last thing he remembered was two headlights blazing toward him as his car rounded a curve. He swerved to the right to miss the other vehicle and hit a tree.

When he awoke he was inside a helicopter looking at a medic and listening to the pilot and copilot. "We have to transfer him fast," shouted the medic. "We're losing him."

Within minutes the MAST (Military Assistance to Safety and Traffic) helicopter was speeding toward its destination. In 15 minutes the UH-1H Huey arrived at a North Carolina hospital.

This person's life was saved because a MAST helicopter swiftly transferred him to the hospital where surgeons were waiting to stop the internal bleeding, correct the spinal injury and treat his facial cuts.

MAST performs 1,000th Mission. Ft. Bragg's 57th Medical Detachment, part of the 1st Corps Support Command's 44th Medical Brigade, recently performed its 1,000th MAST mission. A detachment crew transferred a patient from a Wilmington, NC, hospital to North Carolina Memorial Hospital at Chapel Hill.

At 2:35 in the morning, the detachment received a call from a civilian hospital that a 19-year-old had been run over by a jeep and suffered multiple injuries. While on the helipad, the victim suffered a cardiac arrest. Specialist Five Charles Liles, a medic assigned to the mission, revived the patient and monitored him closely throughout the flight.

"It was just another mission, but it's nice to be recognized. This work is done everyday," said SP5 Liles. "If we can save lives by transporting people quickly by air, then we have accomplished our mission."

57th Medical Detachment honored for performing 1,000th MAST mission

photograph by SP4 Rick Bretz

Other crewmembers assigned to this mission included Chief Warrant Officer, CW3 David W. R. Wyatt, pilot in command; Warrant Officer Frank Nigro, copilot; and Staff Sergeant Willie Cobb, crewchief.

The patient transferred during the 57th Medical Detachment's 1,000th MAST mission is recovering rapidly.

Bragg's MAST Detachment. MAST flights consist mostly of transferring stabilized patients from small rural hospitals to larger community hospitals and transporting donor organs, medicines, blood plasma, medical personnel and equipment.

Ft. Bragg can respond quickly after:

- An alert is received.
- Weather is evaluated.
- Mission approval is granted.

"We provide a service for critically ill persons in outlying hospitals," stated CW3 Wyatt. "There are two aircraft rigged and ready to go at all times. The more time we can save, the better for the patient."

The Huey can transfer up to five patients—three on stretchers and two ambulatory. Bragg's MAST detachment performs missions within a 100-mile radius. The corps surgeon must approve any mission beyond that range.

MAST Medical Coordinator. When hospitals need assistance, they call Dr. Herbert Proctor, North Carolina's MAST medical coordinator, or another doctor authorized to evaluate the request and notify a contact at Ft. Bragg. The doctor evaluates the seriousness of the casualty, the speed needed in transporting and if there is danger of losing a limb. Once the request has been accepted by the contact, the 57th Medical Detachment is alerted and the helicopter team responds.

Prerequisites. Crewmembers receive special training before being accepted into the MAST unit. Pilots take a 3-week aeromedical course at Ft. Sam Houston, TX, and medics receive a class in special emergency medical care.

Frequent Mission. "Our most frequent mission is transporting premature babies to a hospital that has better facilities," stated Warrant Officer, WO1 Kathy Mucha, a pilot with the unit.

She said, "We just don't think about the patient. We concentrate on flying, and the crewchief concentrates on the maintenance of the aircraft."

The detachment would also respond to anything that would cause mass casualties; for example, train crashes.

State Helps Fund Program. The civilian community realizes the importance of the MAST program and the state funds it heavily. The state also makes available a 2-week advanced training program for medics. During this program, medics are instructed in practical work at the University of North Carolina. The medics watch surgeons perform a variety of complicated operating techniques and themselves perform fundamental checkups of patients under the guidance of physicians. At the same time, they are also being taught how to use new medical equipment.

Ft. Bragg's trained helicopter crews and medics aid civilian doctors and rescue squads in emergency situations. They are professionals performing both routine and life-or-death missions. Fort Bragg's MAST program is performing a vital service—not only to Ft. Bragg but also to the civilian community.

Dr. Herbert Proctor, North Carolina MAST medical coordinator, accepts a plaque from Captain Robert L. Kornegay, 57th commander, recognizing him for outstanding service

photograph by SP4 Rick Bretz

AVIATION WARRANT OFFICER RETENTION

The Factors Which Influence the Decision to Leave

Major Gordon L. Rogers

and

CW3 Orion T. King*

U.S. Army Research Institute Field Unit
Fort Rucker, AL

*CW3 King is now assigned to the 227th Aviation Battalion, 1st Cavalry Division, Ft. Hood, TX

MONTHLY WRITING AWARD

IN THE LATTER part of 1979, personnel managers of Warrant Officer Division, Military Personnel Center (MILPERCEN), noted that aviation warrant officers (AWOs) were leaving the Army at a higher rate than in previous years. Specifically, they found a retention rate of 45 percent for the AWOs who completed flight training in fiscal year (FY) 1976 as compared with a retention rate of 65 percent for those who had completed training in FY 1973, 1974 and 1975.

After a series of efforts within Warrant Officer Division to assess the impact of the losses and to gain an understanding of the cause(s), research support was requested from the Army Research Institute (ARI) at Ft. Rucker, AL. During September to December 1980, representatives of the Ft. Rucker, AL, Field Unit of ARI (one commissioned officer, three aviation warrant officers and two civilian psychologists) collected information by questionnaire and interview from over 1,200 aviators, warrant and commissioned, around the world.

This article is the second of a series and provides feedback about the attitudinal portion of the questionnaire to the aviation community in general and particularly to those who participated in the effort. This article includes a list of the factors, in order of importance, which AWOs say influence the decision to separate. A similar ranking provided by commissioned officers is also included. An overview of the retention problem and the ARI/MILPERCEN approach to it can

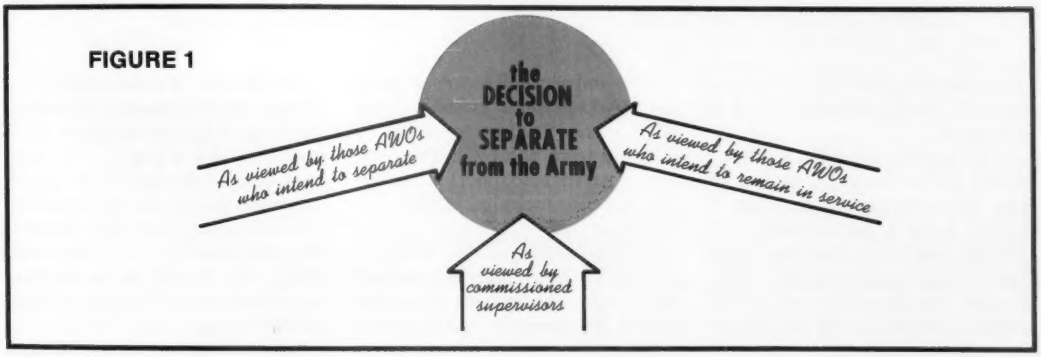


FIGURE 1
the DECISION to SEPARATE from the Army
As viewed by those AWOs who intend to separate
As viewed by those AWOs who intend to remain in service
As viewed by commissioned supervisors

be found in the first article of the series (see "Aviation Warrant Officer Retention: A Matter of Concern," August 1981 ***Digest***).

The goal of the research was a better understanding of the decision to leave the Army (the attrition decision), and more specifically, identification of the factors which influence the individual AWO to make this decision.

As the researchers reviewed previous research on personnel retention, including prior research about aviation warrant officers and aviators from the sister services, it became clear that there was no single "cause" or factor which, by itself, influenced the decision to separate. There were, in fact, almost 50 reasons ("considerations") that were offered as the cause(s) of the high separation rate.

The research problem, then, was to identify which consideration(s) really accounted for the increased attrition among the AWO trainees of FY 1976 and later. The first step was to assemble the considerations, eliminate redundancies and verify the list on a group of AWOs who were separating. This task was completed during the summer of 1980.

It was noted during this preliminary research that the opinion of what influences the separation decision varies with the organizational position or career intention of the individual(s) providing the information. That is, though two or more individuals may observe a particular event, for example an automobile accident, they may describe it differently. Their description may be biased by knowing the people involved or by other personal circumstances. The researchers needed to ensure that enough individuals were questioned to ensure that all relevant issues would be identified and considered. The solution was to collect data about the decision to separate from the three perspectives depicted in figure 1 above.

AWOs who planned to separate (attritees) rated each consideration on the list according to the influence it had on *their personal separation* decision. AWO participants who intended to remain in the Army (retainees) and the commissioned supervisors were asked to rate the considerations based upon *their* opinion of why AWOs were leaving the Army. All respondents used the same *0* to *100* scale in rating: *100* indicated that a particular consideration had the most influ-

FIGURE 2: Participants By Grade

Group	WO1	CW2	CW3	CW4	TOTAL
ATTRITEES	47	98	40	1	186
RETAINEES	30	78	202	46	356
TOTAL	77	176	242	47	542

FIGURE 3: Participants By MOS

Group	ROTARY WING			FIXED WING		
	UTILITY (100B)	CARGO (100C)	ATTACK (100E)	CBT SVC (100Q)	CBT SURV (100R)	TOTAL
ATTRITEES	123	14	41	7	1	186
RETAINEES	147	48	114	40	7	356
TOTAL	270	62	155	47	8	542

ence on the separation decision; a rating of *0* indicated that it had no influence.

The number of AWOs participating in the research, both attritees and retainees, are shown in figures 2 and 3. An additional 255 AWOs indicated that they were "undecided." Although their information is an important part of this research effort, it will not be discussed in this report.

The commissioned respondents included 80 troop/company commanders, 113 aviation platoon commanders, 31 section leaders and 73 who were occupying such unit positions as executive officer, operations officer or maintenance officer. The grades of the commissioned respondents are depicted in figure 4.

Additional background information on all three groups of respondents is shown in figure 5.

Separation Considerations. Figure 6 lists the top 30 considerations as ranked by attritees, and also indicates how those same considerations were ranked by retainees, commissioned supervisors and by attack pilot attritees (100E). The attack attritee data is given separately because this group represents the military occupational specialty (MOS) with the second highest separation rate. Their ranking of several considerations is very different from that provided in the combined AWO attritee column.

As indicated in figure 3, the majority of attritees are utility pilots (100B) and are well represented by the "AWO Attritee" column. Cargo (100C) and fixed wing (100Q/R) attritees were not available in sufficient numbers to report separately and are also included in the combined column.

A description of the research procedure may help to interpret the ratings. Although the procedure called for grouping participants according to career intention (for the AWOs) or their organizational position (for the commissioned officers), the members of these groups are diverse demographically and in their attitudes. For example, some AWOs in the attritee group are W01, 19 years of age, have no prior employment experience and entered Army Aviation with the goal of gaining marketable aviation skills/experience. They had no intention of making the Army a career. Also in the attritee group are CW3s, in their midthirties, married with three or more dependents, 13 years of service (several years enlisted) and who are leaving the Army because of family hardships. Individuals from these and similar situations are unlikely to rate each consideration in a similar manner even though they have similar career intentions.

In attitude measurement it is often useful to develop an average based upon the ratings given by all members of a group. Group averages can be converted to a rank order and groups can be compared. This procedure routinely results in the conclusion that one group places more, less or the same emphasis on an issue as another group places on that issue.

Although space does not allow inclusion of all descriptive statistics that would demonstrate this point, it should be clearly understood that although a single rank order represents the entire group's opinion on an issue, considerable disagreement may exist *within* the group as to which consideration actually has the most influence on the decision to leave the Army. The averages (means) from which the rankings were derived are measures of central tendency and do not indicate that all members of a group feel exactly the same way.

The Top Ten Factors. A review of the top 10 considerations rated by those intending to separate indicates that they relate to three main areas:

(1) PAY AND BENEFITS (Considerations 1, 3, 4 and 9)

FIGURE 4: Grades Of The Commissioned Respondents

	2LT	1LT	CPT	MAJ	TOTAL
COMMISSIONED SUPERVISORS	5	30	190	72	297

FIGURE 5: Background Of Participants

Item	AWO ATTRITEES	AWO RETAINEES	COMMISSIONED SUPERVISORS
Age (Average)	27.8	34.5	31.2
Total Years Active Military Service (Average)	7.3	13.9	9.4
Total Military Flight Hours (Average)	1417	2837	1218

(2) LEADERSHIP AND SUPERVISION (Considerations 2, 5, 6 and 8)
(3) ASSIGNMENT AND CAREER FACTORS (Considerations 7 and 10)

The most agreement among the three groups existed on the pay and benefit issues. The very strong position of the commissioned respondents on pay and benefits adds credence to the warrant officer ratings. This support, in fact, overcame the researchers' concern that pay issues might receive high ratings without regard to the influence they actually had on the separation decision.

The commissioned officers rated the leadership and supervisory factors lower (thought these to be less influential) than did either of the warrant officer groups. On this theme, the U.S. Army War College (USAWC) study (Leadership for the 1970s, 1971) noted, "The impact and effectiveness of leadership vary greatly as a function of the perspective from which leadership is viewed. The company commander's view of the leadership of the platoon leader may differ markedly from that of the men of the platoon. And the platoon leader's view of his own leadership may differ even further. Each perspective has its own inherent bias. The superior is predisposed to look for results, for mission accomplishment. The subordinate, on the other hand, is particularly sensitive to leadership practices which affect, or appear to affect, his own welfare. And the leader himself, viewing his own leadership, has the natural human tendency to overlook or rationalize his own weakness and errors."

Group Differences Of Opinion. Although a great deal of agreement exists among the rankings, AWOs in the retainee group and the commissioned supervisors did not completely agree with the rankings provided by the attritees. The AWO groups, however, are closer to agreement (intercorrelation of .90) than the attritee-commissioned groups (intercorrelation .74). Statistical analyses were performed to identify those considerations which were rated in a manner that was significantly different from the ratings provided by the attritees.

A number of factors that contribute to such differences in perception were noted. Principally, the groups appear to base their opinions on different sets of information, even though they share the same work environment. As in most work settings, civilian or military, a major barrier to agreement is ineffective senior/subordinate communication.

Although the Army formally recognized this problem in 1971 and has applied considerable resources toward encouraging communication (the new OER system) and developing supervisory counseling skills, we have not yet achieved the desired quality or quantity. In this research, 61.2 percent of the AWOs and 52.7 percent of those intending to separate indicated that the chain of command had not discussed their career intentions with them. This percentage is consistent with information collected from commissioned officers in 1976 and 1978 and from warrant officers in 1976. These data support the AWO perception that the Army may not be particularly concerned about them as individuals (consideration ranked number 2). The 1976 data were collected via a MILPERCEN quarterly survey inquiring about the amount of interaction between officers (commissioned and warrant) and OER raters.

Additional differences in point of view may result from the fact that warrant officers, in discussions with commissioned officers, are less likely to implicate the chain of command as a part of the reason for their decision to separate. It is more socially comfortable for the warrant officer to discuss other reasons for separation with their bosses, such as assignment and career considerations (each of which received higher ratings by the commissioned officers).

The fact that commissioned officers in an aviation unit normally deal with a small number of key senior warrant officers rather than with the larger group of less senior AWOs may also bias the communication. This latter point may also explain the higher agreement between the commissioned officers and the retainees, who tend to be more senior (see the background comparison in figure 5).

The attack attritee column in figure 6 reveals that this group is more "dissatisfied with Warrant Officer Division," and more concerned about "career progression in assignments" and "unrealistic combat training." The great difference, as may have been expected, between the ratings by the attritee groups was the influence of "repetitive divisional or Cav" assignments. Attack AWOs ap-

FIGURE 6: Factors Influencing AWOs To Leave The Army

	The top 30 considerations as ranked by:			
	AWO Attritees	AWO Retainees	Commissioned Officers	Attack Attritees
Unequal flight pay (warrant officer flight pay versus commissioned officer flight pay)	1	1	1	1
Lack of concern for the individual	2	5	10*	4
Low pay (all pay and allowances)	3	2	2	2
Erosion of benefits	4	4	5	5
Lack of competence in aviation matters by chain of command	5	7	17	3
Lack of professional respect and recognition from commissioned officers	6	9	37*	7
Lack of opportunity for desirable installation assignment	7	6	13	12
Lack of leadership	8	10	23*	12
Potential for higher paying aviation related position outside of Army	9	8	4	17
Lack of predictability of future in the Army	10	11	12	13
Dissatisfaction with career management by Warrant Officer Division	11	15	6	6
Too much family separation	12	14	11	14
Dissatisfaction with current duty (PCS) assignment	13	17	15	22
Too many additional duties (nonflying)	14	16	19	28
Having to work with unqualified enlisted personnel who are allowed to remain in the Army	15	23	28	11
Limited availability of advanced aircraft transitions	16	13	8	15
Long duty hours	17	24	25	27
Installation policies which discriminate against aviators relative to other groups (i.e., Infantry, Artillery, Armor)	18	21	20	21
Lack of career progression in assignments	19	12	7	10
Low quality of personnel service provided by Warrant Officer Division	20	31	21	16
Lack of predictability of day-to-day work schedule	21	29	32	26
Lack of confidence in the promotion system	22	19	24	20
Low quality of the community environment surrounding military installations	23	33	35	19
Too frequent moves (family dislocation)	24	18	16	31
Little incentive to remain after reaching higher grade levels (early professional peak—CW4 in 14 years of warrant officer service)	25	26	18	24
Unrealistic training in combat skills	26	27	27	18
Insufficient civilian schooling opportunities	27	35*	29	30
Lack of influence over career track selection	28	20	9	23
Repetitive "Divisional" or "Cav" assignments	29	3*	3*	8
Potential for higher pay outside of Army (not aviation related)	30	22	14	36

*Considerations which were rated in a manner which was significantly different (statistically) from the attritee group.

peared less concerned about additional duties and long duty hours.

The data suggest that a cumulative or interactive effect of separate considerations exists. For example, unequal flight pay, although ranked highest, is not by itself the major cause of attrition. However, because pay is so visible and so closely tied to perceptions of self-worth, even slight pay inequities can produce dissatisfaction. Pay may become a deciding factor when other considerations (leadership, career and assignment) are already influencing the decision to separate.

The next article in this series will provide feedback from the demographic and short-answer section of the questionnaire. It will include responses to questions such as:

- Does the attritee have an aviation job waiting?
- How much does he expect to make?
- How many AWOs desire a commission?
- How many would accept one if offered?

FROM BALLOON TO BLACK HAWK

The Army Forward Aeromedical Evacuation Story

Lieutenant Colonel David M. Lam, M.D.
Commander, MEDDAC Medical Department Activity, Fort Irwin, CA

PART IV: VIETNAM

KOREA HAD PROVED to be a valuable testing ground for the concept of forward air evacuation, and the lessons learned by the Army during the Korean War laid the foundation for the massive use of air evacuation in Vietnam which was to follow. In November 1952, the Medical Plans and Operations Division of the Surgeon General's Office was reorganized to include an aviation section, which had as its mission the overall coordination of operations, training, personnel and planning of Army Aviation used in the Medical Service. In the early postwar years this office struggled hard to consolidate the gains made and to preserve the lessons learned in Korea.

It had been realized early in the Korean War that medical control of ambulance aircraft was essential; however, it was also determined that it was not necessary to procure for this mission specialized aircraft as air ambulances. It was decided instead that all future Army aircraft procured would be capable of patient transport functions. This decision would decrease purchase costs, simplify supply and maintenance, and allow improved use of scarce air resources. Therefore, when a design competition for the new standard Army utility helicopter began in January 1955, the Medical Corps Aviation Branch became intimately involved in the design criteria and the selection process. In fact, the medical requirements received such emphasis that in common parlance it became termed a competition for a "helicopter ambulance," although in reality the competition was to choose a utility helicopter with

1) An Army medical evacuation hospital in Vietnam
2) Soldiers carry a wounded comrade through a Vietnam swamp to a nearby landing zone
3) A "jungle penetrator" is used to bring a wounded man aboard a UH-1D medevac helicopter
4) Swift helicopter medical evacuation and immediate, expert treatment at Army evacuation hospitals have saved thousands of lives
5) Inside a Huey a wounded Soldier is comforted during medical evacuation
6) A wounded Soldier is loaded aboard a UH-1 medevac helicopter

Colonel Spurgeon Neel (now major general, retired) holds a model of the XH-40, forerunner of the UH-1 Huey

multiple functions. Bell Helicopter's entry in the competition, the XH-40, was selected. In 1957 it was redesignated the HU-1, and then UH-1 in 1962. Although officially named "Iroquois," it became popularly known as the "Huey." By 1962, in the earliest days of the Vietnam buildup, the Army had 158 UH-1As and 94 UH-1Bs which had increased engine power.

In addition to being involved in the design of the new helicopter, the Medical Aviation Branch devoted major efforts to the development of improved field organizations and procedures for the accomplishment of the evacuation mission. Numerous exercises and maneuvers were held in the years following the Korean War, including Flash Burn, Spearhead, Blue Bolt, Sage Brush, King Cole, Strong Arm and Rocky Shoals, and in nearly all of these exercises testing of forward aeromedical evacuation was a major objective.

As reorganization of Army field units progressed after 1955, a substantial aeromedical evacuation capability was built into a variety of nonmedical units. Utility helicopters and light aircraft became organic to Infantry, Airborne and Armored divisions, corps and armies. Due to procurement policies, all of these were to be capable of patient transport. Although the major reliance for evacuation was to be placed on the air ambulance units, the role of nonmedical aircraft as evacuation craft in Korea was not forgotten.

The testing and reorganization which took place in Army forward air evacuation during the late 1950s were soon to be needed. During the slow buildup of United States forces in Vietnam in the early 1960s, the buildup of air ambulance units

closely paralleled the commitment of United States combat forces. It was early realized that highly mobile and widely deployed forces necessitated a highly mobile and flexible medical support system. Therefore, although the trend at the end of the Korean War had been to consolidate independent helicopter ambulance detachments into the company-size organizations, in Vietnam the detachment was considered the standard organization.

The first air ambulance element sent to Vietnam was the 57th Medical Detachment (Helicopter Ambulance), which deployed in 1962 to support the 8th Field Hospital at Nha Trang. Equipped with the UH-1A Huey helicopters, the detachment was authorized five aircraft. These were upgraded to B models in March 1963. In 1964 and 1965, with the increased level of combat, more air ambulance units were sent to Vietnam—the 82nd Medical Detachment (Helicopter Ambulance) in November 1964, the 283rd Medical Detachment (Air Ambulance) in August 1965, and the 498th Medical Company (Air Ambulance) in September 1965.

Under a new table of organization and equipment (TOE), the detachments arriving after 1964 were authorized six aircraft, and the air ambulance company was authorized 25 aircraft. A third type of air ambulance unit which was also deployed, the aeromedical evacuation platoon of the airmobile division, was authorized 12 aircraft. More units arrived between 1966 and 1969, until at its peak in 1969, Army forward evacuation at field army level consisted of 116 aircraft, assigned to two companies and 11 separate detachments.

By 1968, the old UH-1A and UH-1B model aircraft had been replaced on the TOE of air ambulance units by the UH-1D model, which (with its improvements) could carry six litter or nine ambulatory patients plus a crew of four. With a normal airspeed of 120 miles per hour and a flight endurance of 2½ hours, its arrival in the command dramatically improved the potential utilization.

The development of a medical radio network to control the medevac flights was the basis of the effective medical regulating system which evolved in Vietnam. In early 1965, since there was only one hospital in support of each corps, there was no alternative destination for casualties being evacuated from division areas. As the number of hospitals and casualties increased, however, a regulating system became a necessity. A medical regulating office (MRO) was set up and was coordinated with the Air Force Radar Service at Tan Son Nhut Air Base, which acted as a relay between inbound medevac pilots and the MRO.

The MRO was thus able to confirm or change the destination proposed by the pilot as the medical situation dictated. When the 44th Medical Brigade arrived in Vietnam in 1966, its MRO became responsible for all incountry regulating of patients. Medical group MROs controlled the movement of patients within their supported areas, and the brigade MRO coordinated all moves between group areas.

This development of the two systems, air ambulance organization and medical regulating, enabled the Army Medical Service to develop an enviable record in Vietnam. The number of patients moved by aero-

UH-60 Black Hawk

medical evacuation helicopters in 1965 was 13,004 and it rose to a peak of 206,229 in 1969. The beneficial effects of this massive use of forward evacuation were many. By 1967, it was evident that the use of helicopters had made a permanent effect upon field medical care. To take into account the extensive reliance on air evacuation, a factor which had nearly eliminated the battalion aid station (and in many cases the division clearing station) from the chain of evacuation, a wholesale reorganization of the medical care support of the division was instituted. Testing of the new concept by the 1st Infantry Division in 1967 and 1968 determined that the number of physicians in the division could be reduced from 34 to 12 without impairing the quality of care available to the troops.

Of more importance than the improved organizational effectiveness, however, was the effect of air evacuation on the wounded. Medical evacuation flights averaged only about 35 minutes, a feat which often meant the difference between life and death for the patient. For the first time in history, there was an extremely good chance that a Soldier wounded in battle could be receiving specialized medical care within 1 to 2 hours of being wounded. Of those evacuated who lived to reach a medical facility, about 97.5 percent survived; hospital stays were reduced; and the overall risk of dying in combat if wounded was cut to less than half of the risk during World War II.

Since Vietnam, the organizational changes in field medical support made as a result of the 1st Infantry Division's testing have persisted. Relying on forward air evacuation to reduce the load of casualties seen and treated at the battalion aid stations, the Army has nearly eliminated physicians in battalion surgeon roles. Helicopter ambulance detachments and companies continue to be organized much as they were in the last days of the Vietnam War and are stationed near most large bodies of U.S. Army troops. Many of these detachments are taking part in a joint military-civilian program called MAST (Military Assistance to Safety and Traffic), a program in which military air ambulance units support local civilian communities in medical emergencies. First established in 1970, MAST programs are now in effect at more than 25 locations and have transported more than 16,000 patients.

Although the Huey performed heroically in Vietnam and continues to do so today, it still is a 25-year-old design. In June 1971, the Army approved for full-scale development a project known as UTTAS (Utility Tactical Transport Aircraft System), which was designed to produce a modern replacement for the UH-1 series. Just as the medical department was involved in designing the Huey to make sure that it could function effectively as an air evacuation vehicle, so too has there been significant medical input into the design of the UTTAS. One of the prime missions of the UTTAS is aeromedical evacuation, and design considerations have been made so that it can carry out this mission even better than the Huey. The Sikorsky S-70, selected as the UTTAS model after competitive testing from 1974 to 1976, is now entering the Army inventory as the UH-60 Black Hawk.

In the air evacuation role, the Black Hawk will allow air ambulance units to evacuate patients faster and in greater numbers than with the Huey, and with more inflight medical care than has heretofore been possible. Innovations which will be found on the Black Hawk when it is deployed in an air evacuation role will be a litter-holding pedestal that can be pivoted, raised or lowered to facilitate loading of patients; adjustable lights above each litter location to aid in providing medical care; litter rack pans which will absorb some of the shock of crash landings; and the onboard availability of 115 volt AC power for the operation of specialized medical instruments.

With the UH-60 the Army evacuation system has come a long way from the hastily converted "Jennies" of World War I and a still greater distance from the situation faced by Doctor Jonathan Letterman in the Civil War. Forward air evacuation has truly come of age, and though equipment and organization may change, the mission remains the same: The movement of an injured Soldier from the place of injury to supporting medical care as rapidly, comfortably and safely as modern equipment and man can make it.

LTC David Lam

Editor's Note: This concludes this series of articles on aeromedical evacuation. For copies of any of the four parts, write

Editor,
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ATC ACTION LINE

THE FOLLOWING excerpt from a National Transportation Safety Board safety recommendation identifies a problem area that may happen to any of us:

"On 20 January 1981 at 1127, a Beech B-99, Flight 201, crashed about 4.5 miles southwest of Spokane International Airport, Spokane, Washington. The accident occurred while the pilot was attempting a localizer approach to Runway 3 at Spokane International. The two pilots and five passengers died in the accident; two passengers survived with serious injuries. The aircraft was destroyed by impact and post-crash fire.

The Spokane VORTAC (115.5, GEG, Channel 102) was used for the inbound routing of Flight 201 and is used for the distance measuring equipment (DME) arc for an LOC Runway 3 approach. Upon arrival in the Spokane area, the flight was initially vectored for an ILS approach to Runway 21. However, before the flight began the approach to Runway 21, the tower changed the active runway to Runway 3 and vectored Flight 201 for the LOC Runway 3 approach. This approach utilizes the IOLJ localizer (109.9) and collocated DME (Channel 36), both of which are located on the airport.

While Flight 201 was initially being vectored for the LOC Runway 3 approach, the IOLJ localizer and its associated DME were not operational because the Runway 21 ILS was still being used by other arriving aircraft. An interlock switch in the tower prevents simultaneous operation of these two facilities. The IOLJ localizer/DME were turned on about 1124:08. About this same time, Flight 201 was advised that the aircraft was '6 miles from OLAKE intersection, cleared for the approach.' Shortly thereafter, Flight 201 was advised to contact the tower and Flight 201 acknowledged. No other calls were received from the aircraft.

The normal procedure for the LOC Runway 3 approach allows descent to minimum descent altitude (MDA) after passing OLAKE intersection, which is 4.2 miles from IOLJ. Without the airport environment in sight, a missed approach would be executed at 0.2 DME before reaching IOLJ. Although the investigation of the accident is continuing, one theory being examined is that Flight 201 may have mistakenly initiated an approach and letdown prematurely using DME mileage from the Spokane (GEG) facility rather than the mileage from the localizer facility depicted on the LOC Runway 3 approach chart. Investigators conducting the Safety Board's continuing investigation have interviewed five pilots, including airline and military crews, who have mistakenly commenced the LOC Runway 3 approach using distance information from the Spokane DME instead of the IOLJ DME. If an approach was continued using the wrong DME (Spokane VORTAC), the aircraft would descend prematurely to MDA and could strike the terrain near the Spokane VORTAC, which is approximately the same elevation as MDA. Flight 201's initial impact point was about 1,300 feet south-southeast of the Spokane VORTAC.

The Safety Board is aware that similar approach configurations exist at other airports throughout the United States where there are two DME facilities located near the localizer course, increasing the possibility that a tuning error could result in improper descent to terrain. Incident reports have been received from the NASA-sponsored Aviation Safety Reporting System Office describing like occurrences where confusion existed at other airports with respect to proper distances from approach navigational aids."

Although most procedures seem to follow the same format and are routine, careful scrutiny of all procedures at all times is necessary. Out-of-the-ordinary requirements on some procedures, if not identified and followed, could ruin your whole day!

Readers are encouraged to address matters concerning air traffic control to:
Director, USAATCA Aeronautical Services Office, Cameron Station, Alexandria, VA 22314

Victory at Yorktown on 14 October 1781 signaled the defeat of the British in the Revolution and ignited a feeling of national pride that has spread and grown stronger through the years. Although not present to participate in the victorious assault at Yorktown, Army Aviation has inherited the Spirit of Victory generated there, and today proudly displays that esprit as a member of the combat arms. As we approach the bicentennial anniversary of the victory at Yorktown, it is appropriate for each of us to pause and salute those who fought so gallantly and to pledge that the Spirit of Yorktown will endure.